

Verification of Psychometric Abilities of the Questionnaire the Risky Sexual Behavior and Intimate Relations of Adolescents

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Abstract: The study deals with the examination of the psychometric properties of the newly developed measuring instrument, the questionnaire of Risk behavior and the intimate relationships of adolescents. Content validity has been verified by exploratory factor analysis that has created factors such as promiscuous behavior, alcoholism, sexually transmitted disease and unprotected sex as part of risky sexual behavior. Factor analysis has highlighted the existence of protective factors of intimacy - social support, emotionality, confidential communication, mutual sharing of free time, and risk factors - impaired communication, aggression, jealousy and infidelity. Questionnaire reliability is provided by Cronbach's alpha computation.

Keywords: *factor analysis; validity; reliability; risky sexual behaviour; intimate relationships.*

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1. Questionnaire of risky sexual behavior and intimate relationships of adolescents

When creating the measuring tool, we proceeded from the theoretical background, from a thorough study of foreign and domestic literature, from the analysis of already created measuring tools dealing with the issue of sexual behavior and intimacy. Based on an in-depth analysis of the current state of affairs in Slovakia and due to the absence of a measurement tool investigating the relationship between risky sexual behavior and intimate relationships of adolescents, we designed a new measurement tool, which content validity was verified by factor analysis. Based on the correlations of the factor analysis, items saturated with variables are identified to verify the internal consistency of the measuring tool. The content validity of the newly created measuring tool is ensured by the initial theory on the basis of which the questionnaire was constructed and checked by experts in the corresponding field. The questionnaire consists of two parts, a part of risky sexual behavior and a part focused on intimacy. The individual questionnaire items are statements that focus on sexual behavior in the first part, namely on promiscuous behavior, sexual intercourse, sexually transmitted diseases and unprotected sex. For each of the corresponding areas, there are 2 statements for which the respondent expresses the level of agreement with the statement, with 1 meaning „I fully agree with the statement“, 3 meaning „I cannot assess“ and 5 meaning „I completely disagree with the statement“. When processing the data, the scale value is recoded so that complete agreement expressed by value 1 will correspond to value 5. The minimum value after the sum of variables within one factor is 3 and the maximum value is 15. Another part of the questionnaire consists of claims belonging to the intimacy of adolescents. Within the intimacy, factors that have shown to support the intimate relationships of adolescents were named protective factors of intimacy. Protective factors of intimacy in the questionnaire are assertions aimed at ascertaining the level of consensus in the areas of social support in a relationship, expression of feelings, confidential communication and mutual sharing of free time. Another factor that determines the intimacy of adolescents are risk factors that interfere with intimacy. The intimacy risk factors in the questionnaire consist of assertions aimed at ascertaining the level of agreement in the areas of disrupted communication in relationship, aggression within relationship, jealousy and infidelity. For each of the relevant areas of intimacy, there are 2 statements for which the respondent

expresses the level of agreement with the statement, with 1 meaning „I fully agree with the statement, 3 meaning „I cannot assess“ and 5 meaning „I completely disagree with the statement“. When processing the data, the scale value is recoded so that complete agreement expressed by value 1 will correspond to value 5. The minimum value after the sum of variables within one factor is 2 and the maximum value is 10. The reliability of the method was assessed by verifying the internal consistency through Cronbach's alpha.

1.1. Theoretical basis of risk factors of sexual behavior in adolescents

One of the factors of risky sexual behavior is promiscuity, described by Gurrmacher (as cited by Cooper, 2002), which characterizes sexuality as a risk of emotional and physical pain, which can be caused, for example, by unplanned pregnancy, higher number of intimate partners or sexually transmitted diseases, which are considered as another risk factor of sexual behavior of adolescents. Simon and Gagnon (as cited by Fefejta, 2016) consider reproduction and entertainment, strengthening social ties and reducing conflicts as the main goals of adolescent sexual behavior. Another risk factor for sexual behavior is sex under the influence of alcohol. According to Patrick and Maggs (2009), adolescents who drink five or more glasses during a single event tend to expect sexual intercourse. A negative link was found between alcohol use and protection of sexual intercourse. Alcohol is highly related to the adolescent's decision to have risky sex, meaning unprotected sex, sex with multiple partners, random sex and others (Cooper, 2002). Other factors contributing to risky sexual behavior include premature sexual intercourse, lack of condom use, early use of hormonal contraceptives and unprotected sexual intercourse (Hutton, McCaul, Santora, & Erbeling, 2009). The questionnaire method was constructed on the basis of theoretical background.

1.2. Theoretical basis of protective factors of intimate relationships of adolescents

As a protective factor of intimacy we can consider spending leisure time in a relationship. Šukulová (2017) emphasizes the choice of a careful and dedicated partner who can establish a strong relationship and devotes his free time to the partner. The ideal partner should be emotionally mature and show his feelings or affection to the other partner. Another protective factor of intimacy is social support and trust, which is the most important element of perception of relationships during adolescence (Mičková, 2015; Širůček & Širůčková, 2012). In adolescence, there is a specific virtue, such as fidelity, that allows you to maintain a relationship not only in persistent

childhood relationships but also in newly formed adult relationships (Erikson, 2015). As Hawkley and Cacioppo argue (as cited by Zhang, Gao, Fokkema, Alterman, & Lui, 2015), the most important thing for adolescents is the creation of intimate social relationships and the development of intimacy concepts, while the growing need for intimacy with others, which is lacking, leads to a high risk of loneliness. The emergence of intimate partnerships often leads to physical intimacy, but intimacy should be ensured before sexual behavior, as it is needed, as it ensures the protection of the relationship and the safety of the partners (Alexander et al., 2006). The questionnaire on Risky Sexual Behavior and Intimate Relationships of Adolescents further consists of a part focused on the analysis of intimacy and intimate relationships of adolescents. The measurement method focused on the intimacy of adolescents is divided into two parts - the first part are protective factors of intimate relationships, which mitigate risk behavior and provide a supportive environment (it's supporting intimacy). Based on the theoretical background, 8 statements about protective characteristics of intimacy were compiled and verified by factor analysis.

1.3. Theoretical basis of risk factors of intimate relationships of adolescents

Šukulová (2017) refers to the prototype of an unwanted partner, for which adolescents most often elected a person inclined to experiment with alcohol. A research by Rubin (as cited by Giddens, 2012) found that adolescent, sexually active couples do not expect their relationship to last until their wedding, and Sanchez, Munoz-Fernandéz, and Ortega-Ruiz (2017) found an average number of sexually unmarried connections per month ranging from one into three sexual connections, suggesting that for most women these connections are rather experimental and relatively rare (Felder, Carey, & Carey, 2012). As a risk factor of intimacy we consider the jealousy that Marshall et al. (as cited by Farrugia, 2013) characterize as provoked emotions caused by an event involving an intimate friend or other prominent person. A jealous individual can change emotionally very quickly and gives emotional answers very quickly. Another risk factor is disrupted communication, which has intensified in intimate relationships over time due to the advent of social networks, text messaging and technologies that allow convenient and fast access to information about others. Adolescents are hit hardest by social networks and disrupt not only communication, but also interpersonal and intimate relationships, as they allow you to view other party photos, posts, explore partner search history, or send private messages (Fox & Warber, 2014). Aggressive relationship behavior is another risk

factor for intimacy. Adolescents are more likely to behave verbally aggressively with their partner if they have experienced physical aggression during their childhood (Kaufman-Parks, Demaris, Giordano, Manning, & Longmor, 2017). The last part of the measuring tool are intimacy risk factors with a minimum of 2 points and a maximum of 10 points within one factor. Risk factors of intimate relationships increase the likelihood of risky behavior in intimate relationships. Based on the theoretical background, we used factor analysis with variables related to intimately risky relationships.

1.4. Research problem

The issue of adolescent sexual behavior is dealt with in Cooper (2002), Hutton, McCaul, Santora, and Erbeling (2009), Patrick and Maggs (2009), Fafejta (2016) and others. The issue of teen intimacy is elaborated in the researches Erikson (2015), Šukulová (2017), Sanchez et al. (2017), Kaufman-Parks Demaris, Giordano, Manning, and Longmor (2017) and others. In the presented research there is no research that would focus on both these issues at the same time and consequently would create a single measurement tool. The aim of the study is to explore and categorize the factors of adolescent risky behavior, focusing on their risky sexual behavior and intimate relationships. The identification of these factors through exploratory factor analysis will allow an initial review of the validity of the newly established measurement tool, the Risk Sexual Factors Questionnaire and the intimate relationships of adolescents. The validity of the questionnaire method is ensured by the presented theory on which the questionnaire is based and the control by experts. The reliability of the method was determined by verifying the internal consistency of the questionnaire by means of Cronbach's alpha.

1.5. The research sample

The research sample consisted of 130 respondents from three secondary schools in Banská Bystrica. The research involved 46% (N = 60) female respondents and 54% (N = 70) male respondents. The research focused on the population of adolescent secondary school pupils aged 15 to 18 years. The average age of respondents was 17.05 years of age.

2. Results

To verify the content validity of the questionnaire of Risky Sexual Behavior and Intimate Relationships of Adolescents, we used exploratory factor analysis to demonstrate the validity of the proposed factor structure of the measuring instrument. Table 1 shows the resulting factors resulting

from the exploratory factor analysis and shows which variables are saturated. Four factors are distinguished in color, the first factor being Promiscuous Behavior (risky behavior with a tendency to alternate several unknown partners), which consists of 5 variables. The second factor is Sexual Behavior under the influence of alcohol. The third factor is Sexually Transmitted Diseases and Infections, and the last factor is Failure to Protect. All factors are made up of three variables.

Table 1. Result of factor analysis – created factors of sexual behavior

	Factors			
	1	2	3	4
I prefer alternating sexual and intimate partners.	,778	,205	,153	,199
Sex with a stranger doesn't hinder me.	,757	,325	,215	,136
It doesn't bother me that I've had multiple sexual partners in my life.	,744	,200		
In sex I prefer people I don't know.	,713		,272	,282
Usually I have no problem kissing strangers.	,661	,316	,220	
Under the influence of alcohol, I am more prone to experiment in sex.	,293	,849	,177	
I sometimes have sex under the influence of alcohol.	,367	,765	,263	,186
Under the influence of alcohol, I am more prone to have unprotected sex.	,288	,706	,245	,378
Even though I'm sexually active, I find testing for sexually transmitted diseases unnecessary.		,419	,753	,107
I don't usually worry because of a torn condom.	,366		,740	
I think that sexual diseases and infections are not serious diseases.	,142	,332	,725	,282
It happens to me that I forget to use protection during sex..		,309		,865
I prefer unprotected sex.	,118	,110	,215	,822
I prefer not to use protection when having sex with an unknow person.	,383		,465	,557

Table 2 shows the Cronbach's alpha values for the Risky Sexual Behavior questionnaire, with the Promiscuous Behavior factor of 0.855, and the Sex under the Influence factor of 0.882. The Sexually Transmitted Disease factor is 0.775 and Non-Protected Sex is 0.762. Values from 0.7 to 0.8 represent sufficient internal consistency within the questionnaire.

Table 2. Cronbach's alpha for risky behavior questionnaire

Factors of risky sexual behavior	N Number of claims	Cronbach's alpha
Promiscuous behavior	5	0,855
Sex under the influence of alcohol	3	0,882
Sexually transmitted diseases	3	0,775
Unprotected sex	3	0,762

In Table 3, the results of factor analysis, the questionnaire method of protective intimacy factors, are color-coded. We named these factors as Social Support, Expressing Emotions and Affection, Confidential Communication and Sharing Life and Free time.

Table 3. The result of exploratory factor analysis - created protective factors of intimacy.

	Factors			
	1	2	3	4
I know that in a critical situation my partner will give me a helping hand and will support me.	,847	,228	,196	,262
When something bad happens, I can always count on my partner.	,801	,271	,301	,215
In public (during walks, etc.), we usually hold hands with my partner.	,280	,869	,263	,148
I will be happy to show affection (kiss, hug) to my partner.	,114	,636	,255	,620
I can talk to my partner about anything.	,410	,374	,846	,396
I can trust my partner.	,302	,226	,818	,315
I spend most of my free time with my partner.	,474	,377	,177	,880

I have no problem taking my partner into the company with my friends.	,348	,142	,172	,871
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Table 4 shows Cronbach's alpha values for assessing reliability in individual intimacy factors. All factors have values from 0.7 to 0.9. The Social Support factor has a high internal consistency, the remaining factors have a good internal consistency of the items of the Protective Factors questionnaire.

Table 4. Cronbach's alpha for the Protective Intimacy Factor Questionnaire

Protective factors of intimacy	N Number of claims	Cronbach's alpha
Social support	2	0,896
Showing feelings and affections	2	0,792
Confidential communication	2	0,720
Sharing life and free time	2	0,705

In Table 5, the variables are processed by factor analysis of intimacy risk factors that are color coded into 4 factors. We named the newly created factors-Impaired Communication, Aggression, Jealousy and Infidelity.

Table 5. The result of exploratory factor analysis - created risk factors of intimacy

	Factors			
	1	2	3	4
I don't communicate with my partner about everything.	,831		,154	,213
Sometimes I deceive or conceal information from my partner.	,757	,331		
I would be able to punish my partner if he made me angry.	,112	,853	,102	,153
Sometimes I attack my partner verbally (with swear words).	,109	,646		,134
When I see a partner talking with the opposite sex, I feel jealous.	,180	,198	,951	
It bothers me when my partner shows affection for people of the opposite sex.		,190	,721	

I do not consider faithfulness in the relationship important.	,288	,111		,933
I often imagine cheating on my partner and it doesn't bother me.	,177	,103		,753

In Table 6, the Cronbach's alpha reliability values range from 0.6 to 0.7, which represents sufficient internal consistency within the eight-item intimacy risk factor questionnaire.

Table 6. Cronbach's alpha for intimacy risk factors questionnaire

Risk factors of intimacy	N Number of claims	Cronbach's alpha
Disrupted communication	2	0,765
Aggression	2	0,760
Jealousy	2	0,675
Infidelity	2	0,631

3. Conclusion

As a result of the lack of a single measurement tool focused on sexual behavior and the intimate relationships of adolescents, we have created a questionnaire that examines both issues simultaneously. In the initial psychometric verification of the measuring tool, we verified the content validity by means of exploratory factor analysis, and the reliability of the method was verified by verifying the internal consistency of the questionnaire by the means of Cronbach's alpha. Through factor analysis, we obtained 4 risk factors of sexual behavior, 4 protective factors of intimacy and 4 risk factors of intimacy of adolescents. The newly created measuring tool examines the intimate relationships of adolescents and examines the possible risks that could be related to the effects of risky sexual behavior. Risky sexual behavior is determined by factors such as promiscuous behavior, alcohol, sexually transmitted disease and unprotected sex. Based on the protective and risk factors of intimacy, we created a characteristic of both risk and protective type of intimacy. Based on the obtained data, we found out, among the risk and protective factors, which of the factors prevails in individuals. For a protective type of intimacy, the sum of the factors - Social Support, Sharing Life and Free time, Confidential Communication, and Expressing Emotions and Affections was attaining values of at least 8 and a maximum of 40. For the risk type of intimacy, the sum of the factors - Impaired Communication, Aggression, Jealousy and

Infidelity corresponded to reaching values with a minimum of 8 and a maximum of 40. After adding the values of risk and protective factors, we created types that correspond to the predominance of factors that determine them. The protective type of adolescent in the intimate relationship achieved a higher score in the protective factors of intimacy, and the risk type achieved a higher score in the risk factors of intimacy compared to the protective type. The study, through the development of a new methodology, draws attention to the growing incidence of this issue in adolescents. Further psychometric verification and application of the measurement tool could serve to detect risky sexual behavior in adolescents and thus contribute to preventive measures to prevent or minimize risky behavior of adolescents. Part of the application of the measurement method in practice could be the design of a prevention program that can serve as a diagnostic tool for secondary schools. By addressing this issue, we draw attention to the absence of sex education in schools, or to the teaching of outdated sex education, which does not provide teenagers with sufficient information about the consequences of their risky behavior.

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