

THE PURSUIT OF PLEASURE - A SELF-ASSESSED GLOBAL QUALITY OF LIFE AS A POTENTIAL SCREENING METHOD FOR PROBLEMATIC USE OF DRUGS AND ALCOHOL

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SUMMARY

Background: Notion of self-rated quality of life recently acquires more and more attention among health care professionals. The aim of this study is to determine whether one of the questionnaires measuring this theoretical concept, QOL10, could be applied to help to identify individuals who have problems with drug abuse.

Subjects and methods: QOL10 questionnaire complemented with several filtering questions has been administered to 200 students in various schools in Poland.

Results: The correspondence between QOL10 and the willingness to take drugs is the strongest for QOL10 above 2.5. For QOL10 >2.5 a statistically significant positive correlation ($r=0.464$) has been observed between the frequency of use of psychoactive substances other than alcohol (drugs, medications) and the general quality of life. Therefore they might be considered as a risk group.

Conclusions: QOL10 proved to be quite a specific tool in detecting people who do not have problem with drug abuse. In spite of that, applying only QOL10 for the purposes studied does not provide conclusive grounds for detecting the problem of drug use. Nonetheless, it might be of help in serving as an indicator that some individuals belong to the risk group.

Key words: quality of life, substance use, public health

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INTRODUCTION

The tendency among teenagers, in studies of both secondary and post-secondary school students, to experiment with psychoactive substances, has increased in 2015 in comparison to data from 2011, 2007, 2003, 1999, 1995. According to the study, most common substances used by adolescents were marijuana and hashish (25.0%), tranquilizers and over-the-counter sleeping pills (17.0%) and inhaled substances (11.2%). 19.2% of children in secondary school and 31.5% of adolescents attending post-secondary school respectively, claimed that they used marijuana or hashish over the last 12 months (Union 2017).

The statistics presented may indeed be worrying for health practitioners who think that this significant proportion of young people may become addicted in the future. Interestingly, some epidemiological studies show that a significant proportion of drugs users aged 25-35 "grow out" of their addictions without the intervention of health workers, due to the increased opportunities provided by adulthood. This entails entering into socially responsible roles like the role of a parent or an employee (Heyman, 2013). Moreover, studies on models of addictions carried out on animals ("Rat Park Experiment" (Alexander., 1978)) have demonstrated that while most of the morphine-addicted rats will increase drug use without the alternatives presented, they will refrain from consuming narcotics when different ways of gratification, like social life or sweet snacks are provided (Peele 1985).

Data presented above allows to presume that addiction in some cases might be rather a matter of choice (or motivation to make a choice) than a mere compulsion. Obviously, to avoid oversimplifying, the other crucial aspect is the access to environmental resources: people entering adulthood and having poor environmental resources (understood widely, in the spirit of positive psychology) might be considered a risk group for the problematic use of psychoactive substances. Therefore in long-term prevention and therapy more effort should be put in order to improve the quality of life among people in the risk groups, helping them in entering the adult social roles and in being more independent. Psychiatrists, psychologists and philosophers had numerous debates regarding that issue recently (Pickard 2012).

Assuming the aforementioned viewpoint - which claims that poor motivation is the main reason for an addiction - is correct, substance-dependent individuals can be treated effectively via influencing their motivation and changing their environment - although a prerequisite for this is to know who needs help to the greatest extent. In other words there is a strong need for measuring tool which will cover many of the important factors that may determine whether one will start doing drugs or not.

The level of these environmental resources could be indirectly measured with the use of a number of questionnaires. It was decided to use one of them, which subjectively measured the global quality of life (QOL10), which may soundly reflect on the level of these various environmental factors. Self-rated health scales prove to be a useful and inexpensive tool in

epidemiology (Muller 2016, Ventegodt 2003, 2011). Therefore, the aim of this paper was to use a subjective (self-rated) scale because such tool provides a wide range of information about people's well-being. This kind of information is quite difficult (or even might be nearly impossible) to conceptualize by using only objective measures, as the number of variables taken into consideration is potentially infinite.

The aim of this study is thus to examine the subjectively assessed quality of life (physical, psychosexual, social well-being) in the population of young people and to compare the results obtained with their attitudes towards using psychoactive substances, including alcohol. Studied hypotheses were as follows:

- High QOL10 scores correlate with the willingness to use psychoactive substances in the group of young adults.
- High QOL10 scores correlate with the frequency of use of psychoactive substances in the young adults population.

SUBJECTS AND METHODS

A QOL10 questionnaire was used. It consists of ten items, which are self-rated, Likert-type questions. They are as follows:

1. How do you consider your physical health at the moment?
2. How do you consider your mental health at the moment?
3. How do you feel about yourself at the moment?
4. How are your relationships with your friends at the moment?
5. How is your relationship with your partner at the moment?
6. How do you consider your ability to love at the moment?
7. How do you consider your sexual functioning at the moment?
8. How do you consider your social functioning at the moment?
9. How is your working ability at the moment?
10. How would you assess your quality of your life now?

All of the answers were transformed into numerical values (from "very high" - 1, to "very low" - 5) for the purposes of later statistical analysis.

The wage means of answers form three major components of quality of life: health (questions 1 and 2), quality of life (3, 4, 5, 10) and ability (6, 7, 8, and 9) respectively. Further on these components are called for short HEALTH, QOL, ABILITY. General QOL [QOL10] is an arithmetic mean of the three former components. QOL10 scale correlates well with WHOQOLBREF (research tool recommended by WHO), but it is much shorter and thanks to that the respondents complete the questionnaire more eagerly (Muller et al.

2016). Question 10 (QOL1) and questions 1-5 (QOL5) in fact are separate scales which were previously validated in numerous research carried out in Quality of Life Centre in Copenhagen, Denmark (Ventegodt 2003).

Besides QOL10, the respondents were asked about their age and gender, alcohol, drug and medications use pattern over the course of last three months. In the last question, they were asked to note down a name of any drug (both legal, like OTC and prescription drugs used not according to the recommendations of the health care practitioner, and illegal, like narcotic drugs or research chemicals) that they took during the period of last three months.

250 of the questionnaires has been distributed, 218 collected, although only 200 were properly filled-in. The subjects were adult students of secondary schools and vocational schools (final classes), post-secondary schools and graduate students from several educational facilities located in two cities in Poland: Katowice and Kielce. The questionnaires were distributed in paper form in classes in May and June 2017.

RESULTS

70 women and 130 men were surveyed. The mean value of overall quality of life (QOL10) among men was 1.91 and among women 2.09. The difference was statistically significant (Mann-Whitney-Wilcoxon test, $Z=-2.335 < -1.96$; $p=0.02$). Levene's test result was 4.008 thus variances are different for both groups (Table 1, 2).

Table 1. General quality of life [QOL10] and its three components in the studied population

Health	QOL (quality of life)	Ability	QOL10
1.73	2.14	1.74	1.87

Table 2. Average QOL10 score due to the type of substance being taken

Abstainer	Alcohol	Drugs	Medications
2.03	1.96	2.17	2.41

The respondents were mostly young adults aged from 18 or 20 years (arithmetic mean of age - 20 y.o., median - 19 y.o., $SD=2.4$). They have been divided into three age groups: A (people born before 1998, $n=72$), B (people born in 1998, $n=74$) and C (born after 1998, $n=54$, 53 of them was born in 1999).

These three groups were compared regarding their QOL10 results and its components. The results of Kruskal-Wallis's test for comparing medians showed no statistically significant differences for any of the examined values (QOL10: $p=0.4352$; HEALTH: $p=0.4449$; QOL: $p=0.5652$; ABILITY $p=0.3851$).

In the studied group, 169 (84.5%, group named "Alcohol") respondents declared that they drank alcohol during the last three months. On average, they said that they drink alcoholic beverages once or twice a week. 22 respondents (11% group "Drugs") declared that they

take psychoactive legal or illegal drugs and 15 (7.5%, “Medications”) medications contrary to doctor's recommendations. 31 (15.5% “Abstainer”) respondents did not take any drugs or alcohol over the last 3 months. The types of drugs taken most often are represented in figure 1. The category “stimulants” included amphetamine, cocaine (and it’s chemical derivative) and other drugs used for similar purposes such as pseudoephedrine or methylphenidate. It is noteworthy that almost half of the drugs is situated in the category “unknown”, because the respondents did not fill in the last question. In the category “other” there were mostly tranquilizers (benzodiazepines).

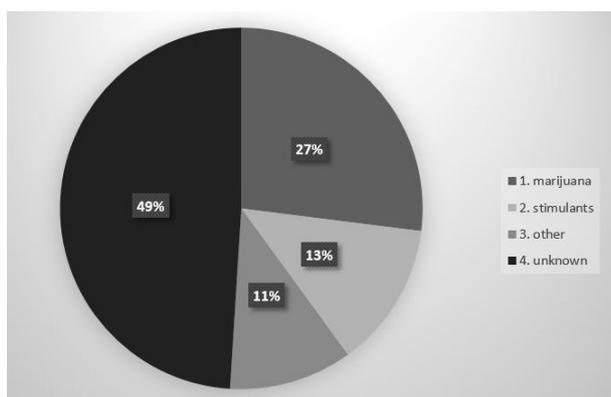


Figure 1. Types of drugs taken in the student population

Mann-Whitney-Wilcoxon's test for comparing Abstainer group (n=31) and for the rest of the studied population (n=169) $Z=0.3156$, with $p=0.772215$. The same applies to Abstainer group and three other groups treated separately – the results are statistically highly insignificant ($p=0.719432$). The results of that statistical test for people drinking only alcohol (n=138) compared to the rest (n=62) revealed significant statistical difference ($p=0.01431$), with $Z=2.448708 > 1.96$. The scores of QOL10 among people taking drugs (medications and narcotics, combined with alcohol; n=33) in comparison with the rest show remarkable differences which are statistically significant ($Z=-2.71045 < -1.96$, $p=0.0067$).

All the data has been sorted by the QOL10 score. Afterwards, the examined population has been divided to 10 equal compartments, 20 person each. The relation between percentage of respondents who declared taking drugs and QOL10 is illustrated in figure 2.

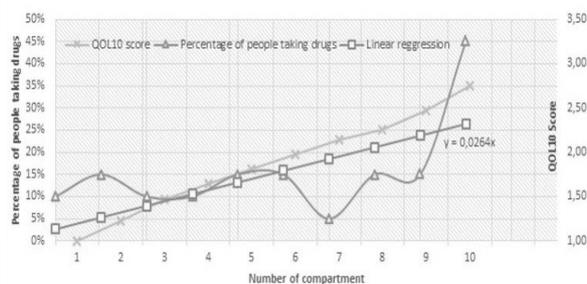


Figure 2. OL10 score and percentage of people taking drugs

The Figure 2 shows that the relative proportion of drug users is the smallest among people with QOL10 score close to 2, while the highest in group where QOL10 exceeds 2.5. For QOL10 score higher than 2.75, the proportion of drug users reaches 45%

Relative risk [RR] has been calculated, $RR=0.352$. It means that people with a lower quality of life (QOL 10 >2.5) have 2.84432 time greater chance of taking drugs compared to QOL10 lower than 2.5.

A statistically significant, moderately strong positive correlation has been observed between the frequency of use of psychoactive substances other than alcohol (drugs, medications) and the general quality of life in the group who were in the last QOL10 compartment ($r=0.464$, $p<0.05$).

A linear regression graph showing the percentage of people declaring drug use was made. It correlates 99.6% with QOL10 results. Beta linear regression analysis value = 0.28. Treating QOL10 as the independent variable, metrology obtained is illustrated in table 3.

Table 3. Sensitivity, specificity, predictive values and accuracy of the obtained results

	QOL10≥2.5	QOL10≥2.75
Sensitivity	34.29	52.94
Specificity	88.48	87.98
PPV	38.71	29.03
NPV	86.39	95.27
ACC	79.00	85.00

PPV = positive predictive value,
NPV = negative predictive value, ACC = accuracy

DISCUSSION

The study confirmed that drug use and scores acquired on self-rated global quality of life are related to some extent. In the studied group, the global quality of life assessed with QOL10 was found to be even somewhat higher than expected for the general population, but these differences are not statistically significant. In the study group, men rated their quality of life higher than women. This is consistent with literature reports (Bisegger 2005). Also, the profile of psychoactive substances used is similar to what other studies describe (Spilková 2012). This all allows to conclude that the studied group does not deviate too much from the general population.

Interestingly, the differences between the results of people not taking any substances (abstainer group) compared to the other groups are statistically highly insignificant. The p value is higher than 0.7 here hence it is possible to assume that these variables may be even unrelated. This means that both the abstainer group and the other groups may be similar in the number of individuals having low and high self-assessed quality of life. The term "abstainers" is perhaps unfortunate, as it suggests that this group includes people who have consciously decided not to take any intoxicating

substances, including alcohol. It is possible that in fact it is different and they may not take alcohol and other psychoactive substances for other reasons, which cannot be tackled with a simple filtering question used.

Young people often consume psychoactive substances in the group, for social purposes. Alcohol appears to be the most common psychoactive substance used for such purpose in Poland and most European countries (Patrick et al. 2012). The vast majority of respondents reported drinking alcohol no more than once or twice a week, so there is no strong reason to believe that they consume alcohol to a problematic extent. This perhaps partially explains why people in a group of alcohol drinkers demonstrated a higher quality of life compared to the other groups. This would, at the same time, explain a relatively lower quality of life for people in the abstainers group. Perhaps it reflected on poorer social relationships.

In the studied population, drug users have a lower quality of life than those who drink only alcohol. The results of the subjects in the two study groups are statistically significant, which is in line with the evidence documented in the literature (De Maeyer 2009). Preliminary confirmation of these results has become the starting point for the formulation of research hypotheses. Some metrological parameters (predictive value, sensitivity and specificity) were calculated by treating measuring QOL10 as a screening test.

Of course, it should be clearly stated at the outset that it was not expected that QOL10 could be used as a fully-fledged diagnostic test. The questionnaire has been designed for other purposes. Although the problematic use of psychoactive substances, and even addiction, can be understood as a chronic disease affecting many aspects of a person's well-being (Laudet 2010, 2010), treating QOL10 as a specific screening test alone would not only be a gross oversimplification with little reflection in reality, but simply would not be valid.

The risks posed by overly hasty treatment of QOL10 as a screening test are more easy to grasp when illustrated, as shown in Figure 2. Although its linear approximation is strongly correlated with QOL10 results, a substantial and statistically significant correlation between these two values exists only for the last two compartments where the individuals whose general quality of life is significantly reduced ($QOL10 > 2.5$) are located. Despite of the sample of only 200 subjects, it can be seen that when QOL10 values are less than 2.5, the proportion of drug users is far from being regular. There is, for example, a small peak of drug users among people who declare a very high quality of life. However, this phenomenon requires more careful studies to be carried out in the future.

Another point worth emphasizing is the research method used, which does not allow to draw conclusions about causal relationships between the tested values. By setting the QOL10 cut point to 2.5 or 2.75, for which the metrological values are optimal, we are only able to determine the correlation and risk of coincidence of the

studied variables. High quality of life measured with the help of QOL10 gives relatively high certainty that a person has no problems with drug use. Inference in the opposite direction, however, is not valid. Many other factors other than problematic drug use can lower the quality of life as well as reduced quality of life does not necessarily have to lead to drug abuse.

Despite of these methodological limitations, it seems that QOL10 can be a useful tool for public health practitioners. Thanks to it, the quality of life of many people, e.g. secondary and high school students, can be studied in an easy way and at low cost. One possible practical usage might be as follows: the respondents with the QOL10 results higher than 2.5 will require more attention from teachers, and what's more, about 30% of such persons may come into contact with drugs. Such respondents may therefore be offered, for example, psychological or social assistance, depending on individual needs. To summarize, using this simple questionnaire for identifying people who are belonging to risk groups is possible.

Moreover, QOL10 can be used to evaluate the effectiveness of therapy and care among the people addicted and after detox (Best et al. 2012, Newman 2012). It will not focus on the somatic aspects of their quality of life, as was usually done so far. Last but not least, the QOL10 questionnaire can be used at the administrative levels. It can help fund managers to better allocate resources so that they are more likely to reach people who actually need help.

CONCLUSIONS

Obtained results show that the research tool used is suitable (however, not without limitations) for implementing it in the Polish population. It yields a lot of valuable information and at the same time it's affordable, easily accessible, and convenient. Correspondence between the level of self-rated quality of life and taking drugs is the strongest for QOL10 above 2.5. This means that people who assess their quality of life as low take drugs significantly more often than the rest of the population. Taking that into account, the results may be of help for e.g. social workers and the health care professionals in fostering the awareness of the quality of life and health promotion as well as to accumulate knowledge to better tackle the public health problem of drug abuse by addressing its causes.

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