Adolescents’ drug use and drug knowledge

Abstract  Self-medication is a common event. To use drugs correctly, a basic knowledge about drugs is required. Poor data are available about adults’ drug knowledge. Furthermore, adolescents’ basic drug knowledge has not been investigated. This study was designed in order to explore adolescents’ drug use and knowledge and the factors that influence them. A total of 56 tenth grade students between 15–17 years of age at a secondary school in Dresden, Germany were enrolled in a pilot study by answering a self-completion questionnaire. Of adolescents, 57% took from one to six different drugs in the 2 weeks before questioning. In particular, a chronic consumption of non-opioid analgesics was found. Some 15% of adolescents took headache remedies at least several times per month. Self-acquisition occurred more often for these drugs than for any other drug group. The best score for drug knowledge was 10 out of 13 possible points and only 43% of students attained from 7 to 10 points. Astonishingly, more than two-thirds of adolescents could not describe in their own words how a medicinal agent is ingested. Female gender and a chronic drug consumption were detected as influencing factors of better drug knowledge.

Conclusion  The results indicate that adolescents gain drug knowledge through drug consumption and not before taking drugs. This leads to a potential risk particularly in the case of self-medication.

Key words  Adolescence · Drugs · Self-medication · Knowledge · Health education

Introduction

Over-the-counter medications are widely used in our society and self-medication and self-administration are common events. In many cases it can be as clinically effective and economical as prescribed drugs. It is estimated that 41% of packages on the German drug market consists of self-medicated over-the-counter drugs [3].

Like adults, adolescents self-administer drugs. Different studies have reported that self-medication starts at the onset of adolescence and increases with age [4, 7, 15]. By administering a self-completion questionnaire to 651 Canadian pupils, it was shown that participants started self-administration of analgesics between the ages of 11–12 years [4]. Even younger children occasionally have the opportunity to take drugs on their own. The observations at an American residential summer camp confirmed that adults give responsibility for self-medication.
at a very early age to their children [14]. Nordlohne and Hurrelmann reported that about 30% of German adolescents between the ages of 13–17 years regularly use drugs on their own [11].

Adolescents can use different sources to obtain drugs, for example physicians, parents, peers, older siblings, home medicine cabinets, relatives, teachers, pharmacies, drug stores, neighbours and the illegal market [4, 12, 15]. The most common source of information about drugs seems to be parents [4, 12]. Society has the responsibility to empower adolescents to use drugs as required and to protect them from drug risks. Up to now, German pharmacists have not been issued with guidelines for dealing with young customers under the age of 18 years. It is unclear whether children and adolescents have the requisite drug knowledge (“biological and medical knowledge”) to self-medicate and to self-administer drugs. In spite of the frequent self-medication by adolescents, little is known about their knowledge of medication. However, a recent review of the literature failed to find any investigations of children’s and adolescents’ basic drug knowledge. Only an attempt was made by May [10] to assess the adult population’s basic drug knowledge. The study showed that nearly a third of the adult population had insufficient knowledge.

The aim of our study was to investigate adolescents’ drug consumption and in particular drug knowledge. We wanted to evaluate whether adolescents are adequately prepared or possess appropriate cognitive sophistication to use drugs as required.

Subjects and methods

Design

To investigate patterns of drug use and drug knowledge, we performed a pilot study by administering a self-completion questionnaire to tenth grade students. Approval for this study was obtained from their parents, the Saxon Education Authority and the principal of the school.

Participants

Participants were 56 students from a secondary school in Dresden, Germany. This school lies in a quarter of Dresden with a good social background. A total of 47% of the pupil’s fathers and 40% of their mothers had a high school graduation. Only 4% of the fathers and 6% of the mothers were unemployed at the time of questioning (personal information of the interviewees). Three students were absent on the day of testing (5 November 1997) because of illness. This resulted in a study sample of 53 adolescents aged 15–17 years (mean 15.8 years; SD 0.8); 26% were boys. None of the students refused participation. The responder rate was 95%. No data had to be excluded from the data analysis.

Questionnaire variables

The questionnaires consisted of 50 questions (multiple choice and open questions). Information was collected on the extent and types of medication, sources of medication, health status, psychosocial stress factors, sociodemographic items and drug knowledge (questionnaire designed by and available from the authors). In order to compare the results on drug use and health status with a representative German study, the same time frames as used by Kolip et al. [8] were chosen. Questions about medication, health status and sociodemographic items were comparable to those of a World Health Organisation questionnaire used in a cross-national survey in 1993–1994 about the health behaviour in school children [13].

To assess drug knowledge, the students were asked for definitions of the following terms: drug, adverse drug reaction, antibiotic, analgesic and prevention. The students had to list the drugs they knew and give their correct indications. They had to describe the path taken by an oral medicinal agent to its destination. In addition, they were asked to give a statement about drinking alcohol while taking drugs and about side-effects of topical agents. Furthermore, the students were asked to summarise a patient package insert and finally they had to classify contraceptives as drugs or non-drugs. The use of prescribed and non-prescribed drugs within the 2 weeks preceding the survey was obtained by means of an open question. Regular drug consumption within the last 6 months was evaluated by listed drug groups.

The reliability and validity concerning the parts which are comparable to other questionnaires can be assumed as good: health status, medication and sociodemographic items. Furthermore, the questionnaire was pre-tested with eight volunteers of the corresponding age group. The questions on drug knowledge can thus be stated as comprehensible. Three experts chose 13 items of the knowledge questions as indicators for good drug knowledge. As in other knowledge tests, these indicators demonstrated face validity by directly reflecting the content and sense, e.g. adverse drug reaction or information of a patient package insert.

Procedure

The survey was administered during school hours and the questionnaires had to be completed within 50 min. At least two of the authors attended each questionnaire session to exclude misunderstandings. In April 1998 the results were presented to the students and an open discussion ensued.

Statistical analysis

For statistical analyses, the program SPSS 7.5 for Windows (SPSS GmbH Software, Munich, Germany) was used. Comparisons were performed using the Student’s t-test for unpaired data. The Pearson correlation coefficient was used to report associations. A type 1 error < 0.05 was considered statistically significant.

Results

The study and the questionnaires were well accepted by both the students and authorities. All questionnaires were received and included in the data analysis. Of all the students, 46% participated in the discussion.

Mental and physical health

The students were asked for 31 different physical and mental symptoms and illnesses during the last 12 months. The six most frequent self-reported symptoms were cough/running nose/sore throat/earache (77%), back pain (49%), nervousness/aggressiveness (38%),