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Agnieszka Pisarska

Analgesic use among residents of youth sociotherapy centres and youth correctional centres

Przyjmowanie leków przeciwbólowych przez podopiecznych młodzieżowych ośrodków socjoterapii i młodzieżowych ośrodków wychowawczych

Department of Public Health, Institute of Psychiatry and Neurology, Warsaw, Poland
Correspondence: Agnieszka Pisarska, Department of Public Health, Institute of Psychiatry and Neurology, Sobieskiego 9, 02-957 Warsaw, Poland, tel.: +48 22 458 26 30, e-mail: agapisar@ipin.edu.pl

ORCID iD
Agnieszka Pisarska https://orcid.org/0000-0001-5539-4615

Abstract

Introduction and aim: International and national studies indicate that analgesic use is common among adolescents. Research projects on this issue in Poland to date have been conducted among youth attending mainstream schools. However, data on the analgesic use among adolescents attending special education institutions, i.e. youth sociotherapy centres (*młodzieżowe ośrodki socjoterapii*, MOS) and youth correctional centres (*młodzieżowe ośrodki wychowawcze*, MOW) is missing. The aim of this study was to assess the prevalence of analgesic use among youth attending special education centres. **Materials and methods:** The study was conducted in 2018 among youth aged 12–19 years from randomly selected MOS/MOW facilities in Poland ($N = 1{,}730$). Data was collected with a self-administered questionnaire. A chi-square test was used to assess differences in analgesic consumption rate by gender and facility type. **Results:** Approximately 60% and 44.5% of study participants used analgesics for headache and stomach-ache, respectively, at least 1–2 times in the past month. Girls are significantly more likely than boys to use medications for headache and stomach-ache. The analgesic consumption rate among MOS/MOW youth is higher than among adolescents attending mainstream schools. **Conclusions:** Due to the risk associated with medicine use preventive measures addressing youth should include activities aimed at improving knowledge and skills regarding safe medication use. A history of analgesic use by an adolescent should be part of a family doctor's routine interview.

Keywords: analgesics, prevalence, youth at risk, youth sociotherapy centres, youth correctional centres

Streszczenie

Wprowadzenie i cel: Badania międzynarodowe i krajowe wskazują, że nastoletnia młodzież powszechnie stosuje leki przeciwbólowe. Realizowane dotychczas w Polsce projekty badawcze dotyczące tej problematyki prowadzone były wśród młodzieży uczęszczającej do szkół ogólnodostępnych. Nie dysponujemy natomiast danymi na temat przyjmowania leków przeciwbólowych wśród nastolatków przebywających w placówkach edukacji specjalnej, tj. w młodzieżowych ośrodkach socjoterapii (MOS) i młodzieżowych ośrodkach wychowawczych (MOW). Celem niniejszej pracy była ocena częstości stosowania leków przyjmowanych z powodu dolegliwości bólowych wśród młodzieży przebywającej w MOS/MOW. **Materiał i metody:** Badanie zrealizowano w 2018 roku wśród młodzieży w wieku 12–19 lat z losowo wybranych placówek MOS/MOW z całej Polski ($N = 1730$). Dane zebrano z wykorzystaniem audytoryjnych badań ankietowych. Do oceny różnic w częstości przyjmowania leków ze względu na płeć i rodzaj ośrodka zastosowano test chi-kwadrat. **Wyniki:** W miesiącu przed badaniem leki z powodu bólu głowy przyjmowało przynajmniej 1–2 razy około 60% uczestników badań, z powodu bólu brzucha – 44,5% respondentów. Dziewczęta znacząco częściej niż chłopcy stosują leki zarówno z powodu bólu głowy, jak i bólu brzucha. Rozpowszechnienie używania leków przeciwbólowych wśród wychowanków MOS/MOW jest wyższe niż wśród młodzieży uczącej się w szkołach ogólnodostępnych. **Wnioski:** Ze względu na zagrożenia związane z przyjmowaniem leków działania profilaktyczne adresowane do młodzieży powinny uwzględniać zajęcia ukierunkowane na doskonalenie wiedzy i umiejętności dotyczących bezpiecznego stosowania farmaceutyków. Wywiad dotyczący przyjmowania leków przeciwbólowych przez nastolatka powinien być elementem diagnozy lekarza rodzinnego.

Słowa kluczowe: leki przeciwbólowe, rozpowszechnienie, młodzież z grup ryzyka, młodzieżowe ośrodki socjoterapii, młodzieżowe ośrodki wychowawcze

INTRODUCTION

Analgesic consumption is common among adolescents, as confirmed by Health Behaviour in School-aged Children (HBSC), an international research project conducted periodically since 1982[1,2]. Analgesic consumption among adolescents has been also addressed in many research projects across different countries. A literature review of research on self-medication among adolescents, which covered 163 studies from around the world, has shown that pain-relievers, vitamins and dietary supplements, as well as pharmaceuticals for colds and allergies were the most common over-the-counter (OTC) drugs used by adolescents. Antibiotics and opioid analgesics were the most commonly used prescription medicines[3]. Therefore, although we seem to have some knowledge on medication use, some authors investigating this topic point to the lack of research on managing pain by young people, including the use of various pharmaceuticals[4]. Analgesic use among adolescents and its determinants have been also addressed in Poland, as part of Mokotów Study, local research project conducted every four years among 15-year-old students[5,6]. It has shown that about half of adolescents in Warsaw used pain-relivers frequently, i.e. at least once a month.

However, it should be emphasised that the studies on the use of analgesics cited here were conducted among adolescents attending mainstream schools[1,2,5,6]. To the best of my knowledge, no research on this problem has been conducted so far among young people who, for various reasons, found themselves outside the mainstream education system.

This paper assesses analgesic use among the residents of youth sociotherapy centres (*młodzieżowe ośrodki socjoterapii*, MOS) and youth correctional centres (*młodzieżowe ośrodki wychowawcze*, MOW). These institutions are intended for young people who, due to the problems they face, cannot continue their education in mainstream schools. These problems include failure to fulfil school obligations, aggressive and violent behaviours, other crimes and offences, use of psychoactive substances, as well as mental health disorders such as depression or suicidal behaviour[7]. Young people are referred to MOS institutions at the request of their parents or legal guardians, supported by the opinion of psychological and pedagogical counselling centres on the need for special education. Juveniles are placed in MOW facilities based on decisions issued by the Family and Juvenile Departments of the District Courts. Adolescent MOS residents are treated as at risk of social maladjustment, while the youth staying in MOW facilities are considered to be already socially maladjusted.

The aim of the study was to assess medicine use for headaches and stomach-ache among adolescents attending MOS/MOW institutions.

METHODS

Sample selection and implementation of the research

Residents of randomly selected MOS and MOW institutions from all over Poland participated in the study. The research was conducted by appropriately trained interviewers from outside the institutions in question, following procedures ensuring the anonymity of individual students, classes and institutions. A paper-pencil questionnaire was completed by 2,063 participants constituting 76% of the randomly selected sample. Surveys collected from 333 participants were excluded from the analysis due to missing data or answers, drawings or vulgar comments indicating that the study was not taken seriously. Finally, the study sample consisted of 1,730 MOS/MOW residents aged 12–19 years (mean age 15.8 years).

Before launching the project, the directors of MOS/MOW institutions were informed in writing about its goals and procedure, and were asked to consent to the students' participation in the study. In cases where parental consent was required, the personnel of a given institution was asked to send letters to the parents to explain the purpose and scope of the study, along with a request for their child's consent to participate in the project. A "passive consent" was used, which means that the study did not cover those children whose parents explicitly expressed their disagreement in communication with the school.

Detailed information on the research methodology presented in this paper can be found in my earlier publication[8].

The research was approved by the Bioethics Committee of the Institute of Psychiatry and Neurology in Warsaw (Resolution No. 34 2017 of October 2017).

Research tool

The questionnaire enquired about the frequency of medicine use due to: 1) headache and 2) stomach-ache, with response scales ranging from "1" = "did not use" to "7" = "40 times or more". These questions were adapted from HBSC and modified by the research team[5]. The use of these pharmaceuticals at least 1–2 times in the last month before the study was an indicator of frequent medication use.

Statistical analyses

Differences in analgesic use rates between boys and girls, as well as between MOS and MOW residents were assessed using the chi-square test, with the commonly accepted significance threshold of $p < 0.05$. As mentioned in the introduction, data on the use of analgesics among adolescents attending mainstream schools is already available[5,6]. This allows for approximate comparisons with data collected among young MOS/MOW residents. For summary purposes, data from the ninth edition of the Mokotów Study, conducted in 2016 among 15-year-old students of Warsaw schools, was used[5]. Similar

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Group	Did not use	1–2 times	3–9 times	At least 10 times	At least 1–2 times
Girls	28.7	33.3	28.5	9.4	71.3
Boys	45.4	29.2	21.7	3.7	54.6***
MOS	38.5	29.0	26.6	6.0	61.5
MOW	40.7	31.6	22.3	5.4	59.3
Total	39.9	30.6	23.9	5.6	60.1
*** $p < 0.001$ (boys vs. girls comparisons). Missing data accounted for 0.2% to 1.1%.					

Tab. 1. Medicine for headache use among the youth attending MOS/MOW (in the last 30 days before the study, %)

Group	Did not use	1–2 times	3–9 times	At least 10 times	At least 1–2 times
Girls	31.6	30.3	29.4	8.7	68.4
Boys	67.4	18.9	11.2	2.5	32.6***
MOS	51.1	22.5	20.6	5.8	48.9
MOW	58.2	22.9	15.1	3.8	41.8**
Total	55.5	22.8	17.2	4.6	44.5
** $p < 0.01$; *** $p < 0.001$ (boys vs. girls and MOS vs. MOW comparisons). Missing data accounted for 0.2% to 1.6%.					

Tab. 2. Medicine for stomach-ache use among the youth attending MOS/MOW (in the last 30 days before the study, %)

Medication use		2016 Mokotów Study ($n = 720$)	2018 MOW/MOS Study ($n = 682$)
For headache	Girls	61.2	74.6
	Boys	39.5	54.2
	Total	49.9	61.4
For stomach-ache	Girls	58.8	69.0
	Boys	21.3	35.6
	Total	39.3	47.3

Tab. 3. Summary of the prevalence of medication use between participants of the MOS/MOW study (younger group: 12–15 years old) and the respondents in the 2016 Mokotów Study (mediation use at least 1–2 times in the last 30 days before the study, %)

methodology and almost identical questions on medication use were used in the Mokotów Study and in the MOS/MOW project. Due to the age differences between the participants of both these research projects, the data obtained from younger participants of the MOS/MOW study, i.e. 12–15-year-olds, was used for comparison purposes in this paper.

RESULTS

Study sample characteristics

Boys accounted for the majority of the study sample (n = 1,159; 67.2%), which illustrates the actual gender distribution of adolescents attending these types of institutions. The study sample was also dominated by MOW residents (n = 1,068; 61.7%), which also reflects the real-life situation, as at the time the project was implemented, there were about 5,000 MOW residents and about 4,000 MOS residents.

The use of analgesics

Medicine for headache use at least 1–2 times in the past month was confirmed by more than half of the surveyed adolescents (60.1%), with higher rates among girls (71.3% vs. 54.6%; $p < 0.001$) (Tab. 1). It is worth noting high percentage of girls who used such pharmaceuticals at least 10 times in the past month. The results indicate that one in ten girls staying at MOS/MOW very frequently used medications for headache. However, there were no differences in those medicine use rates between MOS and MOW residents.

Slightly less than half of the respondents (44.5%) used medications for stomach-ache, again with higher rates among girls vs. boys (68.4% vs 32.6%; $p < 0.001$) (Tab. 2). Differences were also found between MOS and MOW residents, i.e. analgesics for stomach-ache were found to be more commonly used by the youth staying at MOS (48.9% vs 41.6%; $p < 0.01$).

A comparison of data collected among MOS/MOW residents and participants of the Mokotów Study showed that the use of analgesics is more common among adolescents from MOS/MOW institutions vs. mainstream schools. The largest differences were found in the group of boys (over 14 percentage points) for medications taken for both headache and stomach-ache. Among girls, the differences in the headache- and stomach-ache medicine use rates were over 13 and 10 percentage points, respectively (Tab. 3).

DISCUSSION

The use of pain-relivers is common among both girls and boys staying at MOS/MOW institutions. Furthermore, the comparison of the data collected as part of this project with the results of research conducted in 2016 among 15-year-olds from Warsaw indicates that the use of analgesics by adolescents staying at MOS/MOW is more prevalent than among adolescents from the general population. It is worth emphasising, however, that the use of analgesics by adolescents from mainstream schools is also a significant problem[5,6].

The girls staying at MOS/MOW, similarly to the girls participating in the Mokotów Study, are more likely to reach for pain-relievers than boys. This finding is in line with expectations, as numerous studies indicate that both teenage girls and adult women are more likely to report various types of somatic and mental symptoms and use medications, pain-relivers in particular[1–6,9,10]. Menstrual pain is an obvious reason for the differences between girls and boys in stomach-ache related medicine use.

Unfortunately, data on the types of medications taken by MOS/MOW residents is missing. The Mokotów study among Warsaw mainstream school students has shown that adolescents affected by pain most often reach for OTCs based on paracetamol (most commonly Apap), ibuprofen (e.g. Ibuprom, Nurofen) and No-Spa[5]. As it can be assumed, youth from MOS/MOW institutions use the same

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analgesics as their peers attending mainstream schools. However, this issue requires further research.

The use of medications, including OTCs, may pose serious risks. OTCs are easily available due to their relatively low prices and the possibility of purchase not only in pharmacies, but in many other places, including regular grocery shops or newspaper stands[11]. Research, including studies conducted in Poland, has shown that young people independently use the resources of home first aid kits, as well as receive medications from their parents and peers[10,12,13]. Easy availability and ubiquitous advertising promote the belief that the use of OTCs is safe[11].

However, abuse of OTCs based on ibuprofen, paracetamol (acetaminophen) and acetylsalicylic acid can lead to internal organ dysfunction and damage[14,15]. Caution is particularly important when using medications in children and adolescents due to different, as compared to adults, pharmacokinetics and reactivity to medicines that may increase the risk of adverse effects[16].

Accidental and intentional intoxication is yet another serious problem related to the use of medications by children and adolescents. Data on hospitalisation of children and adolescents indicate that cases of intoxication are caused, among others, by painkillers[17–19], including those containing paracetamol[18], an active substance present in many OTCs.

Considering the prevalence of analgesics use among young people, both from special education institutions and mainstream schools, as well as the risks associated with consuming various pharmaceuticals, it is essential to improve young people's skills so that they can properly care for their mental and somatic health. The more so that other studies confirm that young people's knowledge and competencies in the safe use of medicines are insufficient[10].

STUDY LIMITATIONS

The use of a self-administered questionnaire, which is burdened with bias resulting from the imperfection of this tool for measuring respondents' behaviours, is a limitation of the presented study. It is also likely that MOS/MOW residents had concerns about the possible disclosure of their answers to the personnel of a given institution. Therefore, the participants were assured of complete anonymity, their voluntary participation in the study and its confidential nature. After completing the questionnaires, the respondents inserted them into envelopes and the sealed envelopes were handed over to the person responsible for conducting the study. Questionnaires that were considered unreliable were not included in the analyses.

CONCLUSIONS

1. More than half of adolescent MOS/MOW residents use pain-relivers at least 1–2 times a month.
2. The prevalence of analgesic use among adolescents residing at MOS/MOW institutions is significantly higher than among their peers from mainstream schools.
3. Pharmacotherapy is associated with the risk of adverse effects, therefore the issue of self-medication should be included in health promotion and prevention programmes.
4. The history of a child's/adolescent's analgesic use should be an integral part of the family doctor's diagnosis.

Conflict of interest

The author report no financial or personal relationships with other individuals or organisations that could adversely affect the content of the publication and claim ownership of this publication.

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