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EDITORIAL

No to tobacco to reduce mortality

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The world celebrates 'World No Tobacco Day' on the 31st of May as one of its major health days. The day is earmarked for bringing to the attention of the global population tobacco's negative effects that cause the deaths of up to 7 million people each year, 10% of which are a result of passive exposure to smoking [1].

"A cigarette is the only consumer product which when used as directed kills its consumer." – Anonymous

Tobacco has been known to cause mortality in more than half its users; it also adversely affects non-users exposed to second-hand smoke. It is a major risk factor for over six leading causes of death globally. In 2009, the WHO reported tobacco smoking to be the second leading cause of global mortality after high blood pressure [2]. Jha projected a substantial increase in deaths caused by tobacco smoking throughout the twenty-first century, with largest increase in low and middle-income countries [3]. Tobacco attributable death is estimated to rise to 8.3 million globally by 2030 [4]. The authors of a case-control study in Bangladesh concluded that smoking causes about 25% of all deaths of men aged 25 to 69 years in Bangladesh a median loss of seven years of life per smoker [5]. In the United States, between 2005 and 2009, cigarette smoking and exposure to tobacco smoke led to at least 480,000 premature deaths annually in the United States [6] Tobacco not only harms health, but has a negative influence on economies and the environment [7,8]. The former Director General of the WHO, Dr Margaret Chan, commented that it costs the global economy more than USD 1.4 trillion annually in health care expenditures and productivity loss [1].

Credit: WHO

"The true face of smoking is disease, death and horror - not the glamour and sophistication the pushers in the tobacco industry try to portray." — David Byrne

Key elements of the 2030 Agenda for Sustainable Development to which all UN member states subscribe include implementing the WHO Framework Convention on Tobacco Control by 2030 as part of the effort to reduce premature deaths from non-communicable diseases by one third. Three of the most important non-communicable diseases, including heart and lung diseases, cancer, and diabetes, are caused or

made worse by tobacco use [6]. Although many countries, organisations, and even individuals are subscribers to this agenda, the speed of implementation differs by country and region. People everywhere know that tobacco harms health and the environment, but in some countries tobacco production or sales contribute to the economy or tax revenue. Despite wide agreement on the WHO Framework Convention on Tobacco Control by 2030, the enactment across multiple countries will be challenging [8]. Zambia and other African nations continue to face immense challenges in the fight to protect public health from the harms of tobacco. However, Zambia has made great strides in its commitment to implementing and enforcing tobacco control measures through ratification of the Framework in 2008 and, in 2013, a further declaration of intensified actions against tobacco as well as a speedy enactment of a comprehensive Tobacco Act to protect Zambian citizens against the harms of tobacco use [9].

Recently, a policy brief entitled 'Tax the smoker, save the smoker: The health and economic benefits of increased tobacco tax in Zambia' was shared with the Ministry of Health and other key ministries concerned with tobacco farming, cigarette manufacturing and use, and their effects on human beings and the environment. The author, Ms Moraes, describes Zambia's growing concern over the steady increase in cigarette consumption fuelled by adolescent smoking. The reduction of presumptive tax from 24% in 2008 to 27% in 2012 has increased affordability and in turn smoking habits. In 2015, independent tobacco farmers requested further reforms in tobacco tax policy by reducing presumptive tax [10]. In this policy brief, Ms. Moraes recommends increasing taxes as a proven-effective means of reducing smoking and generating revenue. A local leader, Chief Siachitema of Kalomo, echoes the suggested recommendation on increased tax as a solution to avert tobacco smoking. He also suggested stiff measures to manage the increasing, hazardous habit. Much progress has been made globally and in Zambia; we should all feel encouraged to continue fighting this scourge through effective policies.

Our 5th issue also publishes a case report on Depressive Disorder in Child Psychiatric Practice. Depression in Children though frequently unrecognized or easily dispelled as a bad mood is common among children. The paper describes a case of major depressive disorder (MDD) comorbid with attention deficit hyperactivity disorder (ADHD) in a 13-year old and discusses treatment options while emphasizing the need for the medical fraternity to take this scenario seriously and find solutions urgently.

References

1.Chan M. Tobacco is a deadly threat to global development. World health Organisation 2017. URL: http://www.who.int/mediacentre/commentaries/2017/tobacco-threat-development/en/

2.World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks. World Health Organization; 2009. http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf.

3.Jha P. Avoidable global cancer deaths and total deaths from smoking. Nat Rev Cancer. 2009;9(9):655-64

4.Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. PLoS Med. 2006; 3(11):e442

5.Alam DS, Jha P, Ramasundarahettige C, Streatfield PK, Niessen LW, Chowdhury MA, et al. Smoking-attributable mortality in Bangladesh: proportional mortality study. Bull World Health Organ. 2013;91(10):757-645.

6.U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Printed with corrections, January 2014 found at https://www.cdc.gov/tobacco/data_statistics/sgr/50th-anniversary/index.htmWorld Health Organisation. World No Tobacco Day 2017: Beating tobacco for health, prosperity, the environment and national development. URL: http://www.who.int/mediacentre/news/releases/2017/no-tobacco-day/en/

7.World Health Organisation. Tobacco – supporting the tobacco industry is bad economics. Fact sheet No.223. URL: http://www.who.int/mediacentre/factsheets/fs223/en/.

8.Buse K, Hawkes S. Health in the sustainable development goals: ready for a paradigm shift? Global Health 2015;11:13

9.ITC Project. ITC Zambia National Report. Findings from the Wave 1 (2012) Survey. University of Waterloo, Waterloo, Ontario Canada; May 2014. URL: http://www.itcproject.org/files/ITC_ZambiaNR-ENG-FINAL-web_May2014.pdf.

10.Chulu K. Remove tax on tobacco, Govt urged. Zambia Daily Mail. URL: https://www.daily-mail.co.zm/remove-tax-tobacco-govt-urged/.

PERSPECTIVES

Tax the smoker, save the smoker! -The health and economic benefits of increased tobacco tax in Zambia

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Tobacco kills 6 million people globally each year; in Zambia, more than 3,300 deaths each year are due to smoking. Zambia's cigarette consumption is growing steadily fuelled by adolescent smoking. Cigarette taxes dropped from 34% in 2008 to 27% in 2012, making cigarettes effectively more affordable. Increasing taxes effectively reduces smoking and generates revenue.

The Problem

Tobacco use, the single most preventable cause of death, results in 6 million deaths globally each year due to cancers, respiratory disease, and heart disease. The failure of western countries to contain the tobacco epidemic in the beginning of the 20th century resulted in approximately 100 million premature deaths. Although the epidemic in African countries is still at an early stage, it is projected to grow. The WHO predicts that smoking rates will increase from 15.8% to 21.9% by 2030 if policy interventions are not implemented effectively [1]. In Zambia, cigarette consumption has increased steadily, from 1,159 million sticks in 1996 to 2,245 million sticks in 2012, with the number of smokers having increased from 566,400 in 2000 to 854,700 in the same period [2]. Zambia set a voluntary target to reduce the prevalence by 30% from 14.6% in 2010 to 10.2% by 2025 [3]. However, going by current trends, Zambia will be unable to meet its 2025 target if policy measures are not put in place. Of notable concern is the growing trend of tobacco use among youth, increased from 22% to 25% in the last decade [4]. If left unchecked, this will lead to higher overall smoking rates and deaths. The epidemic has been shown to be driven by readily available, low cost cigarettes [5]. With 3,300 deaths each year from tobacco-caused disease [6], tobacco control through proven interventions such as taxation must be a top priority. The FCTC as part of its tobacco control initiative introduced the MPOWER measures to assist in country level implementation of tobacco control interventions. The six components of

Table 1 The Impact of Increasing Exercise tax in Zambia to 54% and 70%

	Current Tax Situation (36%)	Option 1: Increase Excise Tax (54%)	Option 2: Increase Excise Tax (70%)
Excise Tax on Common Brand, current retail price of K13.5	K4.9	K7.3	K9.5
Demand by pieces	1.400b	0.980b	0.616b
(Percent Reduction in Demand)	(-)	(30.0)	(56.0)
Prevalence	13.8%	12.4%	11.2%
(Percent Reduction in Prevalence)	(-)	(10.0)	(18.8)
Government Revenue	K22.7m	K30.6m	K37.6m
(Percent Increase)	(-)	(35.0)	(65.8)

the measures are: monitoring tobacco use and prevention policies; protecting people from tobacco smoke, offering help to quit tobacco use, warning of the dangers of tobacco, enforcing bans on tobacco advertising promotion and sponsorship; and, raising taxes on tobacco. Of these, raising tobacco taxes is the single most effective way to not only encourage cessation but also prevent other individuals, more so adolescents, from initiating tobacco use [7].

Tobacco taxation in Zambia

Currently, cigarettes taxation in Zambia is comprised of the following:

- 25% import duty
- Excise tax (which is the greater Tax (VAT) of either an ad valorem tax or specific excise tax)
- 16% Value Added

An import duty of 25% is levied on imported cigarettes. However, the import duty is not applicable if the cigarettes originate from a country who is part of the Free Trade Area (FTA) agreement with Zambia. Given that over 90% of Zambia's imported cigarettes are sourced from Kenya, the import duty amount is effectively zero [8, 9]. In 2007, the government increased the excise tax on imported cigarettes from 115% to 145% of the Producer Price Value or of the Cost, Insurance and Freight (CIF) value, which equates to about K200 per 1,000 cigarettes [10]. A common misconception is that the 145% excise tax is what is applicable and that since the tax rate is already this high there is no room for upward adjustment. In actual fact, the specific tax worked out to be the greater of the two and therefore the excise tax burden on the retail price translated to 21% [3], one of the lowest in the region.

The recent increase in the specific excise tax to K245 per 1000 cigarettes [11] effectively raised the excise tax to 36% for the most common brand of cigarettes, (Pall Mall Green). Unfortunately, this still falls short of the WHO recommendation for FCTC countries, to which Zambia is a party, which states that excise tax should account for at least 70% of the retail price of tobacco products [12].

Policy Rationale

Evidence shows that consumption of tobacco is responsive to price changes in both developed and developing countries, more so in the latter. The government, by raised tobacco taxes, has the capacity to:

- Reduce the prevalence of tobacco use
- Increase the number of tobacco users who quit
- Reduce the initiation of tobacco use among young people
- Reduce tobacco-related morbidity and mortality
- Increase government revenues

A 10% increase in tax has been shown to reduce demand by 2-8% in adults and up to 18% in adolescents, while overall smoking prevalence reduces by 2% in middle income countries. Ending smoking has many health benefits, including the reduction many serious diseases, and some benefits occurring soon after quitting. Only one year after quitting smoking, the risk of coronary heart disease is about half that of a smoker. The stroke risk is reduced to that of a non-smoker 5 to 15 years after quitting. After 10 years of cessation, the risk of lung cancer falls to about half that of a smoker [13]. Furthermore, the tax increases revenue despite reduction in sales because the reduction in sales is less than proportionate to the price increase. An increase in tax is estimated to cost as little as K0.45 per person per year while raising government revenue by at least 7% [7].

Recent experience: Between 1993 and 2009, South Africa increased the total taxes on cigarettes (including excise and sales taxes) from 32% to 52%. During this period, cigarette sales declined 30%, while government revenue

from tobacco taxes increased by 800%, and smoking prevalence among adults decreased by 25% [14].

Table 2 Trends in current tobacco smoking

FITTED TRENDS IN CURRENT TOBACCO SMOKING (%) POPULATION >15YEARS	
YEAR	POINT ESTIMATE
2000	18.6
2005	16.4
2010	14.8
2015	13.8
2020	13.3
2025	12.9
TARGET (30% reduction from 2010 to 2025)	10.2

Policy options

Option 1: Increase the excise tax from the current 36% (K245 per 1000) to 54% (K365 per 1000 cigarettes):

- In addition to the 16% VAT, this will effectively raise the tax on the commonest brand to 70%.
- The operational and political feasibility are high due to the government's pledged commitment to the ratification of the Framework Convention on Tobacco Control and the fact that the implementation costs are low.
- Demand for cigarettes is expected to reduce by up to 30%, effectively dropping the prevalence from 13.8% to 12.4%.
- Government revenue will increase by 35% from the current K22.7m to up to K30.6m

Option 2: Increase the excise tax to 70% (K473 per 1000 cigarettes):

- In addition to the 16% VAT, this will effectively raise the tax on the commonest brand to 86%.
- The operational and political feasibility are medium.
- Demand for cigarettes will reduce by up to 17%
- Government revenue will increase by 23.8%

Recommendations

Through the Ministry of Finance, a cabinet memo will be prepared recommending an increase of the excise tax to K365 per 1000 cigarettes, which is a 54% increase. In order to keep in line with increases in inflation and income, the specific tax must be adjusted regularly so that total taxes make up approximately 70% of the retail price. This is best accomplished by automatically linking tax increases to economic indices.

A portion of the revenue generated from the increased taxes should be dedicated to the health budget, social programmes and tobacco control such as cessation programmes. Furthermore, government should prevent the tobacco industry from influencing tobacco tax policy development.

References

1.Mendez D, Alshanqeety O, Warner KE. The potential impact of smoking control policies on future global smoking trends. Tob. Control. 2013;22:46–51. doi: 10.1136/tobaccocontrol-2011-050147

2.Ng M, Freeman MK, Fleming TD, Robinson M, Dwyer-Lindgren L, Thomson B, Wollum A, Sanman E, Wulf S, Lopez AD, Murray CJ. Smoking prevalence and cigarette consumption in 187 countries, 1980-2012. Jama. 2014; 311(2):183-92.

3.World Health Organization. Report on the Global Tobacco Epidemic 2015: Raising Taxes On Tobacco. WHO Press, Geneva, Switzerland. 2015.

4.Warren CW, Lea V, Lee J, Jones NR, Asma S, McKenna M. Change in tobacco use among 13-15 year olds between 1999 and 2008: findings from the Global Youth Tobacco Survey. Global health promotion. 2009 Sep; 16(2_suppl):38-90.

5.Guindon GE, Tobin S, Yach D. Trends and affordability of cigarette prices: ample room for tax increases and related health gains. Tobacco Control. 2002; 11:35-43.

6.The Tobacco Atlas. Country Factsheet Zambia. Available at http://www.tobaccoatlas.org/country-data/zambia/ last accessed 21 July, 2015

7.World Health Organization. The Economic and Health Benefits of Tobacco Taxation, WHO Press, Geneva, Switzerland. 2015

8.ERC Group, 2010. World Cigarettes 2010.

9.KPMG. Customs and Excise Duties: The Southern Africa Perspective. 2012.

10.National Assembly of Zambia. 2007 Budget Address by the Minister of Finance and National Planning. National Assembly Archives. 2006.

11.National Assembly of Zambia. 2017 Budget Address by the Minister of Finance and National Planning. National Assembly Archives. 2016.

12.World Health Organization. WHO Technical Manual on Tobacco Tax Administration. WHO Press, Geneva, Switzerland. 2010.

13.World Health Organization. Raising tax on tobacco - what you need to know. WHO Press, Geneva, Switzerland. 2014.

14. Campaign for tobacco free kids (2012) South Africa - Tobacco tax success story. Available at http://www.fctc.org/media-and-publications/meeting-resources/876-south-africa-tobacco-tax-success-story last accessed 10 June 2015

CASE REPORT

Depressive Disorder in Child Psychiatric Practice: A Case Report

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Depression in children and adolescences is a common phenomenon, but, unfortunately, it's diagnosed late, because is not similar to the classical depressive states of adults. In every period of childhood, depression looks different and often hides behind the signs of physical diseases, behavioural disorders, or temporary "intellectual collapse". We present the case of a 13-year-old Zambian girl with major depressive disorder (MDD) comorbid with attention deficit hyperactivity disorder (ADHD). Treatment issues are discussed, and some reasons for the urgency of early recognition and treatment are explained. To the best of our knowledge this is the first documented paediatric case of depression from Zambia.

Background

People aged 16-24 years show the highest level of mental disorders compared to any other age groups [1]. One in four suffers from one or more mental and behavioural disorders in accordance with the DSM-V and ICD-10. Suicide is the leading cause of death at the age of 15-24 years [2].

Depression usually manifests in the middle and late adolescence. Very important is an early diagnosis and management of depression to prevent the worsening of symptoms and the identification of suicidal risk. Adolescence is a period of formation of self-consciousness and identity of a person. The presence of depression affects development and can lead to isolation from family and friends. It can also be the cause of academic failure, the refusal to continue learning and reduce the trend of social growth. Early diagnosis of adolescent depression and the identification of suicidal risk are difficult tasks. Teenagers often do not evaluate their problems as pathological manifestations and treat them as a consequence of social problems and psychological trauma. They are not prone to discuss these problems with parents and teachers.

Case presentation

Nchimunya (*Not real name*), 13-year-old girl who is a student in Grade 6, appeared to Chongwe District Hospital, Chongwe, Chongwe District, Lusaka Province, Zambia. She was assessed by a Clinical Officer Psychiatry (COP) who attended to her case. The girl was born on the 36th week of pregnancy by a caesarean section, the cause of which was pre-eclampsia in the mother and the infant respiratory distress syndrome (IRDS).

According to Nchimunya, her "health" problems started in her Grade 5 (last year) after she quarrelled with her best friend, as a result of which other school friends were against her. Soon later, the girls reconciled, however, Nchimunya no longer believed in the sincerity of their friendship. Despite the conflicts experienced in a student group, the girl finished the academic year with good grades. Summer vacation Nchimunya spent at home,

most of the time watching TV and reading books. Parents tried to encourage her to communicate with friends, but the girl referred to the fact that all her friends went away, and there is nobody to talk to her and "it's stuffy and boring in the street".

Nchimunya hoped that in the next academic year everything will be "as before", the relationship with classmates will become friendly and sincere, such as before the conflict. However, already at the beginning of the school year, being among school friends, she realized that she "does not like her friends", and "there is no previous warmth in the relationship". Mother noticed that the daughter was suffering and realized that Nchimunya's insecurity and the imposition of friendship with her classmates led to greater distance from them. Nchimunya complained to her mother that it became difficult for her to concentrate during the lessons, that she seemed to "fly in space" when she was performing her tasks. At the same time, she managed to maintain academic progress at the same level, but she had to exert more effort and time, which was accompanied by a feeling of fatigue. The girl began complaining of poor sleep. Because of the constant feelings about who she is communicating with at school, how friends treat her, that she may be out of school, the girl fell asleep heavily, it was even harder for her to get up early in the morning. She felt tired, often with pain in her abdomen and again thinking about the problems. During all this time, she ate a lot of sweets and various unhealthy foods, as if "she was eating her stress and pain".

Parents concerned increasing self-isolation, the abnormal pattern of daughter's sleep and unusual eating habit, the decline in school performance decided to show her to COP. The officer diagnosed depression and recommended to start her treatment with an antidepressant (AD) from the group of selective serotonin reuptake inhibitors (SSRIs). Fluoxetine was prescribed in a dose of 20 mg / day. Two weeks later, girl's mood improved and the experiences that tormented were diminished. Nevertheless, the symptoms of mental disorder were not completely reduced. The feeling of fatigue, somatic malaise, irritability in the morning hours, difficulties with concentration and attention were still persisted. COP increased the dose of Fluoxetine to 40 mg / day. After increasing the dose, somatic symptoms of depression were reduced and mood and sleep were normalized, but a significant improvement in the girl's social life was not observed. In addition, Nchimunya gained 5 kg of body weight. The officer recommended to replace Fluoxetine with Amitriptyline in a dose of 25 mg / night and sent the girl to a counsellor. After three months of taking Amitriptyline and counselling, girl's mental health did not change. The officer decided to consult Nchimunya from a psychiatrist.

Nchimunya was presented to us in Chongwe District Hospital while we were doing technical support. She came in a casual wear, objectively, an ordinary teenage girl. Nchimunya was able to maintain eye contact. Speech was normal in tone, rate and volume. She described her mood as "good" and "happy". The flow, form and content of the girl's thought were normal. After the conversation with Nchimunya, we did not detect any perceptual disturbances (illusions and hallucinations). Her cognitive functions were within normal limits. Suicidal and homicidal ideations were absent.

Family history is burdened with depressive and anxiety disorders. A detailed analysis of the mental illness in her family history showed that depressive disorders occurred in Nchimunya's father, mother, aunt and grandmother. The grandfather on the maternal line was diagnosed with alcohol dependence.

In the preschool and primary school classes, she felt quite uncomfortable among the children, constantly worried about her parents. Nchimunya experienced separation anxiety when she went to school or stayed alone. In communicating with peers and adults, the girl was shy, not self-confident and she showed weak social adaptive behaviour.

In addition to mental state examination, we conducted a number of psychological tests. Assessment of The Multidimensional Anxiety Scale for Children (MASC) [3] showed the presence of a moderate social anxiety. The results of testing using the Children's Depression Inventory (CDI) [4] revealed low self-esteem and the presence of interpersonal conflict. Her result of 30 points indicates the presence of moderate depression. Nchimunya's condition did not meet the criteria for Posttraumatic Stress Disorder on the Child and Adolescent Trauma Screen (CATS) [5] scale.

According to the screening using the Conners Teacher Rating Scale (CTRS-R) [6] the girl has an attention deficit hyperactivity disorder (ADHD). Based on the assessment of the Conners Parent Rating Scale (CPRS-R), [6] the girl had social difficulties, psychosomatic disorders and ADHD.

Diagnostic procedure

Clinical manifestations and dynamics of mental disorders identified and evaluated by members of a multidisciplinary team required differential diagnosis between a range of mental disorders: depression, dysthymia, social anxiety, generalized anxiety, post-traumatic stress disorder, and ADHD.

The girl has numerous mental disorders that support the diagnosis of depression: a dominant depressive mood, noted from her Grade 5 (despite indicated good mood by MSE), anhedonia, social isolation during the summer holidays, increased appetite, passion to sweets, sleep problems, specific cognitive impairment (decreased concentration and inattentiveness during class lessons, increased time and physical effort to complete assignments, reduced academic performance).

Symptoms partially confirming the diagnosis of depression: physical fatigue, reduced energy (in the context of insomnia), the existence of a tendency to self-abasement, manifested in social experiences, restlessness during an interview, which may indicate psychomotor agitation in case of anxiety. The inconsistency and inattentiveness can also testify in favor of the diagnosis of ADHD.

The girl also has clinical manifestations that do not support the diagnosis of depression: the absence of thoughts about death or suicide.

We faced problems with differential diagnosis in the evaluation using DSM-V diagnostic criteria [7]:

- 296.35. Major depressive disorder in partial remission – positive family history confirms the probability of such diagnosis;
- 300.02. Generalized anxiety disorder – in the case of a diagnosis of major depression the disorder is not diagnosed, so the relationship between this disorder and depression should be clarified;
- 314.01 or 314.00. High probability of ADHD – when conducting differential diagnosis, it is necessary to find out whether this is a combined presentation or predominantly inattentive presentation;
- 309.21 and 309.81. Separation anxiety disorder and Posttraumatic stress disorder – anxiety disorder caused by quarrel and separation from friends in the history and presence of posttraumatic stress disorder is unlikely, but it

requires an exception as is the situation of bulling in school that was hidden from her parents.

Diagnosis

This clinical case involves a chain of problems associated with diagnosis and treatment. So, according to the history of the disorder, a 13-year-old girl lives with her parents and a younger brother, her development is undergoing with a background of an increased level of anxiety (especially separation and social), and problems with concentration and attention.

Beginning Grate 5, Nchimunya began experiencing symptoms of mild depression with spontaneous remission. The conclusion about the recurrent course of depression is supported by the family history (depressive episodes were previously noted in her relatives) and premorbid psychiatric disorders associated with violations of serotonin neurotransmission (anxiety and attention problems).

In Grade 6, presentation the development of a longer depressive episode, for the relief of which SSRI and TCA were used (in a therapeutically effective dosage, with an adequate duration of admission) and maintenance therapy, which ensured partial remission.

Subsequently, the course of the depressive episode was heavier with disturbances in social interaction, appearance of cognitive impairments (difficulties in schooling), decrease in self-esteem and development of sleep disorders.

At the time of interview, the girl had diagnostic criteria for a moderate depression, social anxiety and problems with concentration and attention.

Establishing the most accurate diagnosis and prescribe an effective complex pharmacological and psychotherapeutic treatment, we took into account all the information obtained during the interview and as a result of testing, which was compared with the diagnostic criteria of the DSM-V and ICD-10. Checking the implementation of diagnostic criteria for taxonomy is crucial in conducting differential diagnosis and formulating the final diagnosis. More accurate diagnostic information can be obtained from a clinical interview with the patient, assessing the severity of the symptoms, their duration, time of appearance. Although it may not completely satisfy the task of clinical and differential diagnosis, it is preferable to use a special semi-structured interview for the diagnosis of affective disorders and schizophrenia of Kiddie-Sads-Present and Lifetime Version (K-SADS-PL) [8].

When formulating the final diagnosis, it is important to consider the likelihood of comorbid disorders. Clinical studies indicate that 70-80% of adolescents with depressive disorders have at least one or more comorbid disorder. Identifying a comorbid disorder at the level of depression is difficult because of the inaccuracy of the initial picture of the disease, so it is important to be attentive throughout the treatment and to adequately assess the changes in clinical manifestations in the patient.

During the diagnostic interview, it was found that Nchimunya's mental state meets the criteria of unspecified anxiety disorder DSM-V with a wide range of clinical symptoms including somatic manifestations, social anxiety, anxious-oriented coping strategies of avoidance, which, however, do not fully correspond to the diagnostic criteria for more discrete anxiety syndromes. The patient experiences great discomfort in social situations, especially in communicating with peers, which complicates the differentiation of her condition with depression.

In determining the therapeutic strategy, complexity can also be caused by uncertain cause-effect relationships

between comorbid disorders. For example, it is important to understand whether the girl suffered from ADHD for 6-7 years before the first symptoms of depression appeared. Even if we assume that these are different disorders, we have to admit that they affect each other. For example, ADHD leads to school disadaptation, violates relations with peers, creates the predisposition for traumatization and the development of a depressive disorder. On the other hand, a specific neurocognitive deficiency in depression may include secondary impairments of attention and activity. Nchimunya can have two relatively discrete mental disorders or manifest, for example, ADHD and bipolar disorder (BD).

Table 1 DSM-V and ICD-10 diagnosis

THE DSM-V DIAGNOSIS
296.22 Major Depressive Disorder: Moderate
314.00 Attention-Deficit / Hyperactivity Disorder, Predominantly Inattentive presentation.
GAF: 51-60 – according to Children's Global Assessment Scale (CGAS). [9]
THE ICD-10 DIAGNOSIS
F32.11 Moderate depressive episode with somatic syndrome
F90.0 Disturbance of activity and attention
F93.2 Social anxiety disorder of childhood
Z60.4 Social exclusion and rejection
GAF: 51-60 – according to CGAS.

Symptoms of the girl's disorder also met DSM-V criteria for ADHD (predominantly inattentive subtype). Symptoms of ADHD precede the development of symptoms of depression, manifested primarily when it is boring and exacerbated in social unsettling situations. Symptoms of Nchimunya's ADHD cause problems in communicating with peers and social life in school. Problems with attention and disturbance of activity include: increased distractibility of some auditory stimulus, low adaptive behavioural skills, inability to plan their activities in solving social problems and difficulties in maintaining the sustainability of attention.

When choosing and evaluating treatment methods, it is also important for the clinician to consider not only the development of the disorder, but also its consequences. For example, Nchimunya earlier had some difficulties in communicating with peers, but with the depression, social disadaptation was impaired. Even after the reduction of depressive symptoms, we should not expect that social isolation will automatically disappear. This is also relevant for the observed phenomena, such as, low self-esteem, sleep disturbance and problems with concentration and attention.

Treatment strategies

Nchimunya was prescribed an initial course of AD therapy in a recommended therapeutic dose with subsequent increase, and also psychotherapy (counselling) to prevent relapses. This therapeutic strategy was tested in a Texas project to determine the algorithm for the drug treatment of depression in children [10]. The main goals of this method of treatment are complete recovery of the adolescent and prevention of depression relapses. The recommended therapy includes the administration of fluoxetine, citalopram, sertraline, escitalopram or paroxetine. Other medications

should be administered with extreme caution and taking into account the condition of the patient.

Psychotherapy, such as cognitive behavioural therapy (CBT), can be an effective adjunct to pharmacological treatment [11]. The results of a study of treatment of depression in adolescents suggest that CBT as an additional intervention to psycho-pharmacotherapy

significantly increases the overall effectiveness of treatment [12].

In addition to the episode of depression, the girl was diagnosed with anxiety symptoms. In this case, the use of SSRIs and CBT is equally useful in both depression and anxiety disorders [13]. However, for the patient as a supplement to the treatment of anxiety symptoms, the use of relaxation therapy and systematic desensitization techniques can be recommended as an adjuvant therapy.

The use of polypharmacotherapy, especially psychostimulants and SSRIs, could be the right therapeutic decision in ADHD, in addition to which, special behaviour therapy can be recommended.

Discussing Nchimunya's treatment, we should pay attention to the fact that after consistent courses of two recommended ADs – SSRI and TCA, remission was not achieved. This served as the basis for increasing the dose of AD. As a therapeutic alternative, it was necessary to consider switching to other group of ADs or starting to lithium carbonate or bupropion [14]. Change of the drug is usually recommended if there was no positive dynamics or there are unbearable side effects. Increase the dose of AD is indicated for patients who have the effect of treatment, but remission is not achieved [15].

After reaching a positive therapeutic response in the treatment of depression it is recommended to continue it for 6-12 months. Such therapy can be carried out both with the use of pharmacological agent and in combination with psychotherapy (CBT).

Pharmacotherapy is often used to eliminate comorbid symptoms of depression. Many experts believe that it is advisable to start adjuvant treatment before starting therapy for the underlying disease. Such symptoms are not direct criteria for determining a primary disorder (for example, aggression in a patient with depression). These symptoms sometimes require the administration of additional psycho-pharmacotherapy. In this case, we should remember general rule: once the symptoms of the underlying disorders are reduced, additional treatment must be stopped. Some data from studies of adult patients with depression and insomnia show that combination therapy with hypnotic and AD effectively reduces symptoms, rather than just AD.

In Nchimunya's case, clinicians first of all, should consider the need to treat comorbid ADHD using appropriate protocols to achieve maximum therapeutic effect. First, it is possible to revise the drug prescribed for the treatment of depression, SSRIs should be replaced with the group of selective serotonin and norepinephrine reuptake inhibitors (SNRIs), for example, duloxetine. Secondly, therapy with SSRIs can be supplemented with psychostimulant therapy (methylphenidate, amphetamine or atomoxetine). The third strategy includes continuing the treatment with SSRIs for the reduction of neurocognitive disorders associated with depression and as a result it might reduce the severity of activity and attention impairments [16].

Recommendations for further treatment should be based on the results of monitoring Nchimunya's condition, include advice on the organization of psychosocial care and long-term psycho-pharmacotherapy, as well as behavioural correction in school. Any of the interventions should be based on the principles of evidence-based medicine. In the girl case, for the management of depression and anxiety can be recommended CBT. There are guidelines for CBT for both clinicians and directly for the patients. It is useful for a physician or therapist using CBT to combine several psychotherapeutic techniques, such us, dynamic activation, cognitive restructuring, conflict reduction, exposure, cognitive restructuring and positive self-reinforcement.

Nchimunya should be encouraged to participate in social activities outside the school, for example, church or sport activities which will help to expand her communication. Cooperation with her parents and teachers is important aspect of implementing the chosen strategy, which can be carried out on an outpatient basis.

It is advised that parents of children with depression should attend special parent groups to modify the negative experience that strengthens the oppositional behaviour of the child [17]. This experience may be the result of an incorrect relationship with the manifestations of the primary maladaptive complex associated with ADHD, depression or anxiety. Diet and exercises, perhaps, can help Nchimunya to lose weight.

Even when receiving a highly-qualified CBT in the presented clinical case it is difficult to achieve a qualitative remission without drug treatment. Based on the data presented above, the probability of remission is estimated at 50% in the first four months of therapy and 90% of achieving significant improvement after long-term treatment. Drug treatment should reduce the severity of anxiety, depression, eliminate disturbances in activity, facilitate the use of CBT and increase its effectiveness. CBT can prevent the development of relapse after drug withdrawal. In the case of monotherapy, it should be taken into account that the use of medications is sometimes associated with an increase of suicidal risk, but when using CBT, suicidal tendencies can be significantly reduced and better and longer remission can be achieved [18].

Conclusions

Depression in children and adolescents is not just "a bad mood". It is a serious emotional disorder that affects the development of a child or adolescent, his/her well-being and the quality of life. Intrauterine pathologies are common causes of depression in children. Prolonged foetal hypoxia, intrauterine infections and neonatal encephalopathy may turn into depression. Typical manifestations of depression of children teenagers, such as depressed mood, motor retardation and slowing of cognitive processes are not peculiar. Many parents see that something is going on with a child or a teenager, but they do not even suspect that this is depression. Depression in adolescents threatens to continue into adulthood, predicts a six-fold increase in the incidence of suicide in adults. If depression occurred before puberty, transition to adulthood is unlikely.

Author Contribution

Both authors contributed equally to this work.

References

1.Prevalence of mental disorders in the Australian population. The Department of Health. Retrieved from http://www.health.gov.au/internet/publications/publishing.nsf/Content/mental-pubs-m-mhaust2-toc~mental-pubs-m-mhaust2-hig~mental-pubs-m-mhaust2-hig-pre (Accessed 01/04/2017).

2.Death among young people aged 15-24. Authoritative information and statistics to promote better health and wellbeing. Australian Institute of Health and Welfare. Retrieved from: http://www.aihw.gov.au/deaths/premature-mortality/ages-15-24/ (Accessed 01/04/2017).

3. March J. S., et al. The Multidimensional Anxiety Scale for Children (MASC): factor structure, reliability, and validity. J. Am. Acad. Child Adoles. Psychiatry. 1997. Apr. 36(4): 554-565.

4.Kovacs M. The Children's Depression, Inventory (CDI). Psychopharmacol. Bull. 1985. 21(4): 995-998.

5.March J. Assessment of pediatric Post-traumatic stress disorder. Post-traumatic stress Disorder. Edited by Saigh P. & Bremmer D. Washington, DC: American Psychological Press. 1999. 199-218.

6.Conners C. K. Conner's Rating Scales – Revised; technical manual. 1997. North Tonawanda, NY: Multi-Health Systems.

7.Desk Reference to the Diagnostic Criteria from DSM-5 TM. 2013. American Psychiatric Association. Washington, DC: American Psychiatric Publishing.

8.Kaufman J., et al. Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL): Initial Reliability and Validity Data. July 1997. Volume 36, Issue 7: 980-988.

9.Shaffer D., et al. Children's Global Assessment Scale. Retrieved from: https://www.rcpsych.ac.uk/pdf/CGAS%20Ratings%20Guide.pdf (Accessed 01/04/2017)

10.Hughes C., et al. The Texas Children's Medication Algorithm Project: Report of the Texas Consensus Conference Panel on Medication Treatment of Childhood Major Depressive Disorder. Journal of the American Academy of Child & Adolescent Psychiatry. November 1999. Volume 38, Issue 11: 1442-1454.

11.Weersing V., et al. Community clinical treatment of depressed youth: Benchmarking usual care against CBT clinical trials. Journal of Consulting and Clinical Psychology. April 2002. Vol 70(2): 299-310.

12.March J., et al. Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents With Depression Study (TADS) randomized controlled trial. JAMA. Aug 2004. 292(7): 807-820.
13.Seidel L., Walkup J. Selective serotonin reuptake inhibitor use in the treatment of the pediatric non-obsessive-compulsive disorder anxiety disorders. J Child Adolesc Psychopharmacol. 2006. 16: 171-179.
14.Rush A. J., et al. Acute and long-term outcomes in depressed outpatients requiring one or several treatment steps: A STAR*D report. American Journal of Psychiatry. 2006. 163: 1905-1917.
15.Trivedi M. Evaluation of outcomes with citalopram for depression using measurement-based care in STAR*D: implications for clinical practice. American Journal of Psychiatry. 2006. 163 (1): 28-40.
16.Fava M. Augmentation and combination strategies for complicated depression. J Clin Psychiatry. November 2009. 70 (11): e40.
17.Rapee R. M. Potential role of childrearing practices in the development of anxiety and depression. Clinical psychology review. 1997. Volume 17. Issue 1: 47-67.
18.Hammada T. A. Suicidality in pediatric patients treated with antidepressant drugs. Arch Gen Psychiatry. 2006. 63 (3): 332-339

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