

Prospective study on dynamics of depression in mid-adolescence

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Summary

Aim. The aim of the study is to evaluate the occurrence and dynamics of depression during mid-adolescence. It is conducted in prospective studies on a representative group of high school students in a large town.

Method. In a two-stage draw, a representative group of 1737 13 year-old adolescents was chosen. They were surveyed by the Kraków Depression Inventory (KID) subsequently in 2001, 2002 and 2003.

Results. The point prevalence of depression was respectively 24.6%, 24.5% and 26.6% for 13, 14 and 15 years olds. The spread-out rate of depressive disorder in the studied group turned out to be relatively stable.

Conclusion. Depression is more common amongst mid-adolescent girls than boys. Dynamics of the disorder, when studied throughout the three years show that amongst the mid-adolescent population, depression is a disorder of heterogeneous nature.

depression / mid-adolescence

INTRODUCTION

Presumption of the reported study was a thesis on the developmental nature of depressive disorder in adolescence, formulated in Poland by Antoni Kępiński [1], verified later in clinical studies [2]. The current literature is dominated by an approach based on a hypothesis of common nature of all affective disorders [3], and, in consequence differentiation between depression and sadness as a normal reaction in a child and adolescent towards a stressing or traumatising experience [4].

The Kraków epidemiological survey results allow concluding, that occurrence of depression in

mid-adolescence is neither related to macro-social stress [5] nor individual risk factors [6]. As such, it supported hypothesis on normative nature of depression in mid-adolescence. Nevertheless, the 15-year follow-up study [7] revealed relations between depression, even in mid-adolescence, and unfavourable course of life, especially in its social and general health dimensions. These results are congruent with those presented by other researchers of the same problem [8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18]. Classifications of mental disorders in use at present (ICD-10, DSM-IV) have been presumed temporary. Depressive syndromes appearing during adolescence can be classified, according to these classifications as affective disorders, behavioural and emotional disorders occurring specifically in childhood and adolescence, emotional disorders due to somatic condition and/or posttraumatic disorders, depending on the context of depression occurrence. In such circumstances the nosological approach to depression in adoles-

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cence seems to be justified. Depression – in the reported study – is understood as a syndrome.

Aim of the study

The goal of the study is identification of data bringing closer to answering a question of dynamics of depression during mid-adolescence. Earlier observations [19, 20] allowed a presumption that the point prevalence index is sTab. in this developmental stage, and is higher among girls.

MATERIAL AND METHODS

Prospective survey of a representative sample of high school students in a large town was planned. In 2001, in a two-stage draw a sample of 1737 13 year-old students of the 1st year of junior high school was chosen. They were surveyed three times in 2001, 2002 and 2003 by the Kraków Depression Inventory (KID). KID is a questionnaire covering a set of depression symptoms (mood, anxiety, cognition, activity, self-destruction, somatic symptoms) characteristic for pre-adolescents and adolescents in early- mid- and late-adolescence. Three versions of KID have been developed respectively: AO"B1" for parents of preadolescents, IO"B1" – for 13-15 year-old adolescents, and IO"C1" – for adolescents over 16. As a descriptive task of the questionnaire was chosen the authors had decided to leave the items of low discriminative value. Diagnostic validity of KID IO"B1" in screening studies was similar to that of the Beck Depression Inventory. KID IO"B1" consists of 104 items, 89 of which refer to depression symptoms. Introductory instruction asks to identify symptom characteristics to the previous month. Nevertheless, some of the items (e.g. especially referring to self mutilation and suicide attempts) require reflection covering longer time. KID results are assessed with a sten scale. KID IO"B1" reliability index - Cronbach alfa = 0.9404; diagnostic validity index – point biserial correlation coefficient $r = 0.5344$.

Surveyed students were asked to sign their responses to make individual follow-up possible.

1737 KID IO"B1" questionnaires were distributed among chosen school groups in 2001, 2002, 2003. Completed questionnaires (1636 in 2001,

1202 in 2002 and 1118 in 2003) were included into analyses. In dynamics analysis however, only those, which could be identified individually for all three stages of survey were taken into account. Tab. 1 illustrates proportions of distributed and analysed questionnaires in each stage of the study.

Point prevalence of depression could be assessed upon results obtained from 64.4 – 92.1% of the group of mid-adolescent high school students selected for the survey. Analysis of depres-

RESULTS

Table1. Pupil sample and information collected

Year	Initial population sample	Number of KID IO"B1" collected	%
I – 2001	1737	1636	94.18
II – 2002	1737	1202	69.20
III – 2003	1737	1118	64.36

sion dynamics could be performed in the group of 320 students (18.4% from the initial 1737). Proportions of those subjects who could be traced in time along the follow-up are presented in the Fig. 1.

Point prevalence indexes in the first stage of the study in 2001 for the whole sample (24.6%; 26.8% for girls, 22.5% for boys) and at the same stage for the group followed-up (25.3%; 27.4 % for girls, 22.8 % for boys) are presented in Fig. 2.

Point prevalence of depression among mid-adolescents.

Point prevalence of depression in the population studied was based on screening diagnosis of depression based of the result of KID IO"B1" ≥ 7 . Assessment was performed in the same population sample three times in: 2001 (13 y.o.), 2002 (14 y.o.), 2003 (15 y.o.). Results are presented in Tab. 2 and Fig. 3.

Depression point prevalence index in the sample studied was relatively stable: 2001 (13 y.o.) = 24.6%; in 2002 (14 y.o.) = 24.5%; in 2003 (15 y.o.) = 26.6%

Fig. 1. Data collected in mid-adolescence sample across the longitudinal study

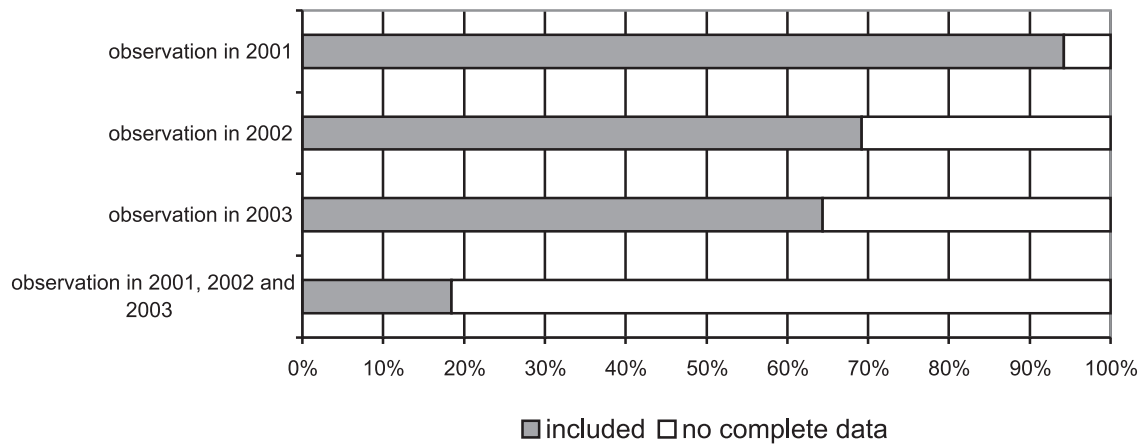


Table 2. Point prevalence of depression among 13, 14, 10 yo

Year	2001				2002				2003			
Age	13				14				15			
	Depressive		Non-depressive		Depressive		Non-depressive		Depressive		Non-depressive	
	N	%	N	%	N	%	N	%	N	%	N	%
Boys	179	22.5	618	77.5	117	22.0	416	78.0	123	22.3	429	77.7
Girls	209	26.8	571	73.2	150	26.9	408	73.1	174	30.7	392	69.3
All	388	24.6	1189	75.4	267	24.5	824	75.5	297	26.6	821	73.4

Depression point prevalence differences between boys and girls in 2001, 2002 and 2003:

For 2001: Pearson's $\chi^2 = 3.995$; $df = 1$, $p = 0.046$

For 2002: Pearson's $\chi^2 = 3.324$; $df = 1$, $p = 0.058$

For 2003: Pearson's $\chi^2 = 10.251$; $df = 1$, $p = 0.001$

Depression point prevalence differences in 2001, 2002 i 2003 for boys:

Pearson's $\chi^2 = 0.048$; $df = 2$, $p = 0.976$

Depression point prevalence differences in 2001, 2002 i 2003 for girls:

Pearson's $\chi^2 = 3.019$; $df = 2$, $p = 0.221$

Fig. 2. Point prevalence of depression among 13 yo in 2001

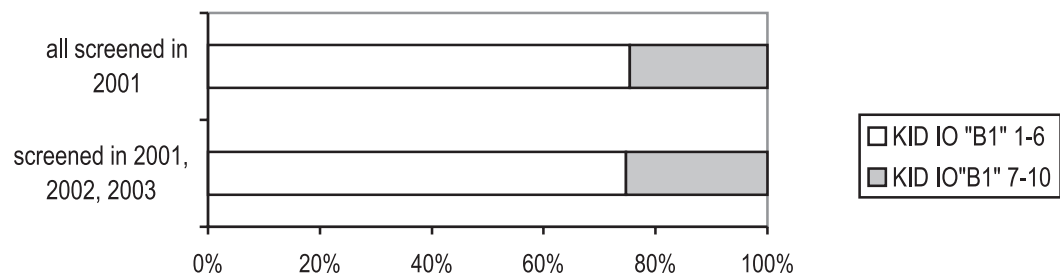


Fig. 3. Depression point prevalence in 2001, 2002 and 2003 among 13, 14 and 15 yo

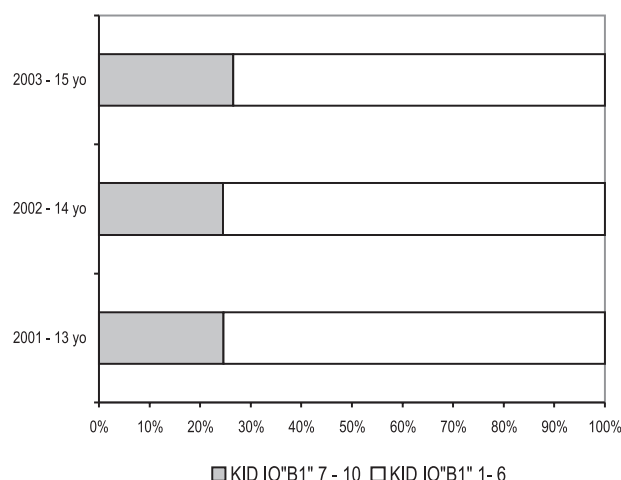
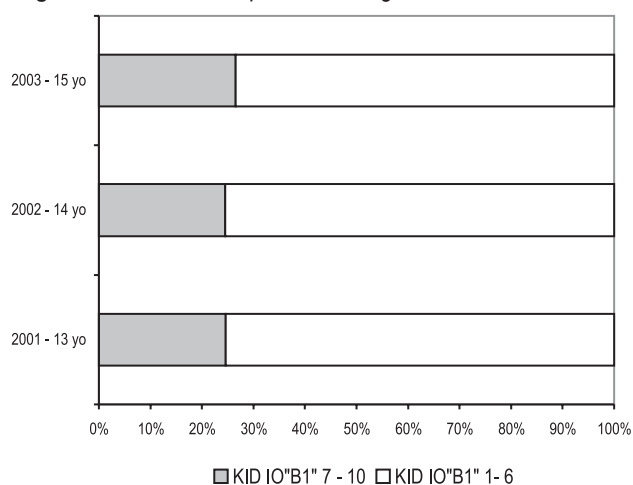


Fig. 4. Prevalence of depression and gender



Depression and gender

Our earlier studies showed that in mid-adolescence depression is more often diagnosed in girls [19, 20]. This finding was checked out this time in the same sample, in consecutive three years. The difference appeared to be statistically significant in the first and last stage of follow-up, and insignificant in the middle (2002). Results are presented in Tab. 2 and Fig. 4.

Depression point prevalence indexes in consecutive years and in each year are higher for girls, than for boys. But, changes are not significant statistically.

Dynamics of depression between 13, 14 and 15 year of age

Changes in depressive symptoms' intensity were based upon differences in KID IO"C1" results in 320 students, between 2001, 2002 and 2003, when the subjects were subsequently 13, 14 and 15 year old. KID IO"C1" results were compared between 2001 and 2002, and 2001 and 2003. Four different types of change in were identified:

A. results KID ≥ 7 , allowing for screening diagnosis of depression found in both stages of the study

Table 3. Depression dynamics in mid-adolescence

Boys

Diagnosis of depression in:		2003 non-depressive	2003 depressive
2001 non-depressive	2002 non-depressive	99 (66.4%)	9 (6.0%)
2001 non-depressive	2002 depressive	6 (4.0%)	1 (0.7%)
2001 depressive	2002 non-depressive	15 (10.1%)	3 (2.0%)
2001 depressive	2002 depressive	2 (1.3%)	14 (9.4%)

Girls

Diagnosis of depression in:		2003 non-depressive	2003 depressive
2001 non-depressive	2002 non-depressive	97 (57.3%)	11 (6.4%)
2001 non-depressive	2002 depressive	5 (2.9%)	11 (6.4%)
2001 depressive	2002 non-depressive	13 (7.6%)	5 (2.9%)
2001 depressive	2002 depressive	9 (5.3%)	20 (11.7%)

Boys and girls together

Diagnosis of depression in:		2003 non-depressive	2003 depressive	Together
2001 non-depressive	2002 non-depressive	196 (61.3%)	20 (6.3%)	216 (67.5%)
2001 non-depressive	2002 depressive	11 (3.4%)	12 (3.8%)	23 (7.2%)
2001 depressive	2002 non-depressive	28 (8.8%)	8 (2.5%)	36 (11.3%)
2001 depressive	2002 depressive	11 (3.4%)	34 (10.6%)	45 (14.1%)
Together		246 (76.9%)	74 (23.1%)	320 (100%)

B. results KID ≥ 7 , allowing for screening diagnosis of depression not found in 2001, but later in 2002, or 2003

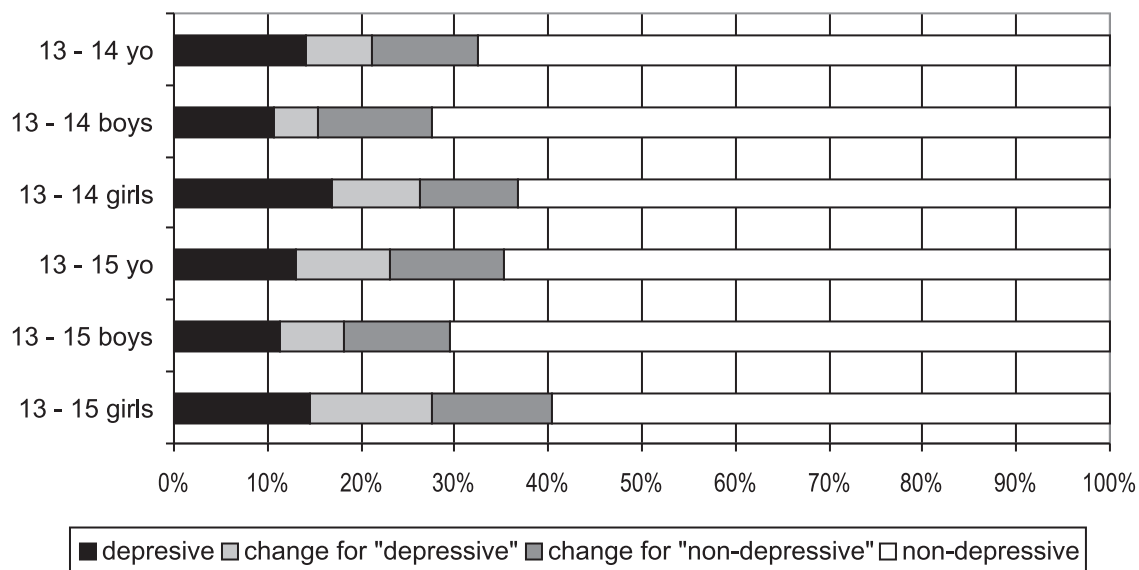
C. results KID ≥ 7 , allowing for screening diagnosis of depression found in 2001 and lower in next years (2002 or 2003)

D. results KID ≤ 7 , in each year of the study.

Proportions of identified changes in KID IO"B1" results for the whole sample, and separately for girls and for boys are presented in Fig. 5.

Non-depressive students formed the biggest subgroup in both comparisons (2001/2002 - 216, 67%; 108 boys, 72.5%; 108 girls, 63.2%, and 2001/2003 - 207, 64.7%; 105 boys, 70.5%; 102 girls, 59.6%). The subgroup showing depression in the second year of the study consisted in 23 persons - 7.2% (7 boys, 4.7%; 16 girls, 9.4%). In the third year of the study, depression was diagnosed for the first time in 32 students (10%; in 10 boys, 6.7%; 22 girls, 12.9%). Depression diagnosed in 13 y.o., disappearing in 14 y.o. characterised 36

Fig. 5. Changes in depressiveness after 1 and 2 years



students (11.3%; 18 boys, 12.1%; 18 girls, 10.5%); disappearing in 15 y.o. - 39 students (12.2%; 17 boys, 11.4%; 22 girls, 12.9%). Subgroups of students diagnosed as depressive both in 2001 and 2002, or 2001 and 2003 respectively were: 45 (14.1%) and 42 (13.1%); boys - 16 (10.7%) and 17 (11.7); girls 29 (17.0%) and 25 (14.6%).

Changes in KID IO"B1" results reflecting depression, disappearance of depression and pe-

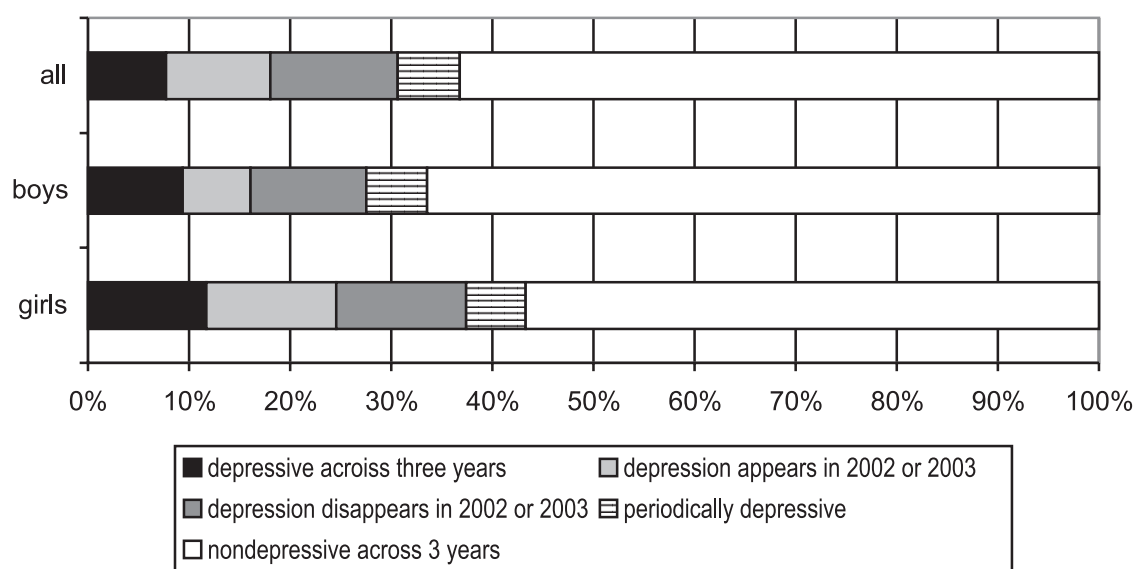
riodic appearance of depression in three consecutive years, allowed identification of 5 subgroups of mid-adolescents. The subgroup not diagnosed as depressive in three stages of the study showed to be the biggest one (N=196, 61.6%; 99 boys, 66.4% and 97 girls, 57.3%). The subgroup diagnosed as depressive throughout the study, in each stage was formed of 34 students (10.6%; 14 boys, 9.4% and 20 girls, 11.7%).

The subgroup of the students showing depression in 14 or 15 y.o., and still depressive in 15 y.o. (N= 32, 10.1%) consisted of 10 boys (6.7%) and 22 girls (11.4%). The subgroup with depression in 13 y.o., and non-depressive in 14 y.o. or/and 2003 was formed of 39 students (12.2%; 17 boys, 11.4; 22 girls, 12.9). The subgroup with periodical appearance of depression N=19 (5.9%) was composed of 9 boys (6.0%) and 10 girls (5.8%). Proportions of the subgroups are presented in Fig. 6.

Discussion

Small changes in point prevalence index of depression assessed in the same population in three consecutive years indicate a relative stability in prevalence of the disturbance studied. This stability can be enforced by the nature of KID designed for screening diagnosis of depression as well as size of the representative population sample.

Fig. 6. Changes in depressiveness between 13 / 14,15 yo



Nevertheless some expected results of the study, such as significant decrease of point prevalence value among boys, and its increase among girls, observed in earlier developmental stage of transition from childhood to preadolescence [19], did not show up. It can be hypothesised, that such change accompanies the process of puberty. The difference in prevalence of depression between girls and boys (depression is more often diagnosed among girls) seems to be stable in mid-adolescence, in spite of an evident growth of prevalence of depression among girls with age. This result, however congruent with clinical observations, should be approached cautiously, as the number of 15 y.o. included in analysis was smaller in comparison with 13 y.o. and 14 y.o.

Analysis of the dynamics of depression in mid-adolescents identified a group of young-

sters (appr. 10%), more girls than boys, as depressive at each consecutive study stage. These findings indicate a possibility of the long-term depressive course of adolescence.

Girls were also found to be more often represented in the group with intermittent appearance of depression through mid-adolescence. Earlier results of cross-studies on depression in adolescents [20, 21] suggested that this type of dynamics is characteristic for this developmental stage. A longitudinal study did not support this.

Depression, as diagnosed in screening with KID, showed to be quite often among mid-adolescents. A longitudinal prospective observation revealed that depression is not diagnosed in more than 60% young people between 13 and 15 years of age. But, in those who are diagnosed as depressive, the course of the disturbance var-

ies. The observation of dynamics of the symptoms does not allow for any hypothesis on its nature. Nevertheless the observations suggest, that adolescent depression nature is ambiguous, and should not be classified as one kind of mental disorder.

The predictive value of screening diagnosis of depression in mid-adolescence remains unanswered. Follow-up studies, also Polish, showed that a depressive course in adolescence is related with the quality of life in adulthood [7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18].

CONCLUSIONS

Depression in adolescence is not unambiguous in nature, as far as it can be assessed upon its course.

Point prevalence of depression in mid-adolescents is more often among girls, also when course characteristics are taken into account. Depression also appears earlier among adolescent girls.

Predictive value of early diagnosis of depression requires further studies.

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