

Executive summary:

Truancy is a serious public health problem that affects youth; however, little is known about the underlying social and psychological factors among those adolescents who truant. Existing truancy interventions focus primarily on reducing adolescent absenteeism in order to improve school attendance rates, without addressing social and psychological issues associated with truancy. In an extensive effort to explore the relationship between truancy and mental health, the WE-STAY project was developed with the aim to collect important epidemiological data on truancy and to perform a randomized controlled trial of interventions in order to assess its efficacy in preventing truancy and promoting mental health among European adolescents. In the WE-STAY project, a large sample ($N=11,186$) of adolescents (M/F: 5568/5558; 60 with missing gender; mean age: 15.09 ± 1.3) was recruited from six study sites across Europe: Estonia, Germany, Israel, Italy, Romania and Spain. Epidemiological data was collected through a comprehensive questionnaire comprising 435 variables related to socio-demographics, mental health, social factors and attitudes towards school. Adolescents were randomized into one of the four intervention arms: professional screening (TRUANCY-SCREEN), awareness of truancy and mental health problems (TRUANCY-AWARE), combination of the professional screening and awareness interventions (TRUANCY-COMBINE) and a mechanistic control arm for truancy (TRUANCY-MIC). Baseline, 1-month and 12-month follow-up questionnaires were administered and completed by adolescents and parents. Results showed that 17.8% of the sample reported to have skipped school three or more days per month without a valid excuse in the past year, thus, were considered truant pupils. Truancy was higher among males compared to females (57% vs. 43%, $p < 0.0001$) and slightly older (15.5 ± 1.3 vs. 15.0 ± 1.3 , $p < 0.0001$). At baseline, truancy was associated with poor mental health, risk-behaviours and peer victimization. In particular, truant pupils were more likely to drink alcohol (24% vs. 7.4%; $p < 0.0001$), use drugs (25.9% vs. 8.8%; $p < 0.0001$), smoke cigarettes (75% vs. 41.3%; $p < 0.0001$), have a higher BMI (21.3 ± 3.6 vs. 20.8 ± 3.3 ; $p = 0.028$), report less days of physical activity per week (2.2 ± 2 vs. 2.4 ± 2 ; $p = 0.003$) and to be bullied (20.4% vs. 15.2%; $p < 0.0001$).

Longitudinal within-group analyses revealed that all interventions significantly reduced truancy. Between-group analyses showed that the number of truant pupils who changed their behaviour to being less truant at the 12-month follow up was significantly higher ($p < 0.05$) in the TRUANCY-COMBINE arm (58.9%) in comparison with the TRUANCY-SCREEN arm (47.8%) and the TRUANCY-MIC arm (50.6%). No significant differences were found between the TRUANCY-COMBINE and TRUANCY-AWARE arms (51.8%). The TRUANCY-SCREEN and TRUANCY-AWARE interventions both showed to increase well-being and decrease psychiatric symptoms, such as depression, suicidal ideation, conduct problems and hyperactivity among pupils. Even if the TRUANCY-COMBINE intervention was more effective than the TRUANCY-SCREEN intervention in reducing truancy, the positive effects, in terms of mental health improvement, of the TRUANCY-COMBINE intervention was not significantly larger than the effects of either the TRUANCY-AWARE or TRUANCY-SCREEN interventions when administered alone. Moreover, using the TRUANCY-COMBINE intervention on the same subjects appeared to be highly demanding in terms of time and resources. On the basis of WE-STAY results, and in the absence of a significant augmentation potential, it is not recommended to combine awareness increasing interventions and professional screening

interventions on the same subjects. The same effects in terms of both, truancy reduction and mental health improvement, were obtained by the TRUANCY-AWARE intervention alone. The TRUANCY-MIC intervention, contrary to the other interventions, had no positive effects on the mental health of truant pupils, with the exception of an obvious decrease in conduct problems (i.e. truancy itself), and a slight increase in active coping, which was probably activated by forcing pupils to attend school. WE-STAY results, therefore, indicate that including a mental health component in intervention programs for truancy is highly recommended. Otherwise, even if truancy might be reduced in a mechanistic control approach, mental health problems, which are common among truant pupils, are not affected in any way.

Project context and objectives:

1. Background

Truancy is a serious public health problem that affects youth from all countries around the world; however, little is known about the short- and long-term outcomes of underlying social and psychological factors among those adolescents who truant. Research has suggested that there are severe implications of truancy, such as misbehaviour, failed courses and early dropouts [1]. Truancy is believed to be a predictive marker for future behavioural and psychological problems; thus, preventing truancy is an essential component in mental health promotion. A literature review has indicated that the majority of intervention programs for truancy are performed in the United States (US). These interventions focus primarily on reducing adolescent absenteeism in order to improve school attendance rates. This approach is important, however, does not necessarily address the underlying social and psychological issues associated with truancy. It is essential to understand the psychological underpinnings among adolescents who truant in order to develop comprehensive and effective interventions. Implementation and evaluation of interventions aimed at preventing truancy and promoting mental health, particularly within the European context, are key initiatives in resolving the core problem in Europe.

Prevalence of truancy

As many as 30% of adolescents are absent from school at any given time [2]; however, those who are actually truant is conservatively estimated to be between 1% and 5% [3]. The majority of data on truancy originates from the US through court ordered petitions. Truancy is often defined by US State statutes and is translated into school policies by local school districts. As many US school district procedures for absenteeism rely on legal classifications of truancy and perfunctory referral to juvenile justice systems [4], court referrals and public-based services often perform truancy court proceedings within the school milieu [5]. In the Ramsey Court Juvenile System in Minnesota, court petitions for truancy increased over 300 percent from 117 to 507 petitions during a two-year period [6]; while, in Denver, the juvenile court reported a truancy prevalence of 9% [7]. The US Office of Juvenile Justice and Delinquency Prevention (OJJDP) reported that national court petitioned truants increased 67 percent from 34,100 to 57,000 cases during 1995-2007 [8]. It is estimated that the chronic truants referred to court proceedings are a comparatively small proportion of total truants in the US [9]. In a US nationwide survey, Henry [10] ascertained that up to 35% of twelfth graders reported truancy, which is a moderately higher prevalence compared to those reported by the juvenile justice systems.

There remains a scarcity of research assessing the prevalence of truancy in other countries, however, with the exception of a few studies. In Africa, Muula and colleagues [11] performed a study on truancy in Zambia. Results showed that 58.8% of the participants (58.1% of males and 58.4% of females) reported being truant. In Swaziland, the prevalence of truancy among adolescents was 21.6% (27.4% in males and 17.9% in females) [12]. The only studies in Europe were performed in the UK. A study performed in Edinburgh, Scotland found that the prevalence of truancy increased with age, i.e. 18% of students reported truanting per year in primary school and 44% per year in secondary school [13]. Attwood and Croll [14] found similar results in England, with the prevalence of

truancy increasing by 50% in students attending grade 11 compared to grade 10. Overall, the study found that, in England, students who reported truancy during the past year increased from 1.1% in Year 7 to 9.5% in Year 11. In Zurich, Switzerland, an epidemiological study found that the prevalence of truancy increased during the one-year study period from 5% to 18.4% [15]. The relatively high prevalence of truancy and discrepancies reported globally justifies a cause for concern.

Truancy and risk-behaviours

There are multiple studies indicating a significant relationship between truancy and risk-behaviours [16-19]. Chou and colleagues [20] found that there is a potential reciprocal relationship between truancy and substance use (i.e. alcohol, marijuana, tobacco, ecstasy and ketamine). This has been corroborated in other studies. Henry and Huizinga [21] showed that truancy was a significant predictor of alcohol, tobacco and marijuana use among adolescents aged 11-15 years; the robust influence of truancy even continued after controlling for latent confounding factors. A study performed in Norway revealed that truant adolescents reported significantly higher levels of binge drinking compared to non-truant adolescents; results showed that truants were four times more likely to report regular drunkenness and two times more likely to report problems associated with their alcohol consumption [22]. In addition to finding a significant association between truancy and alcohol use, Siziya et al [12] reported that truancy was also linked with bully victimization, which was later substantiated by Ervasti and colleagues [23]. In a more recent study, Mulla et al [24] confirmed these findings by showing an increased relative risk of truancy among students who have been bullied (AOR = 1.34, 95% CI [1.32, 1.36]) and used alcohol (AOR = 2.19, 95% CI [2.16, 2.23]). In the same study, the authors also found that pupils whose parents or guardians checked their homework (AOR = 0.91 95% CI, [0.89, 0.92]) and those who reported parental supervision (AOR = 0.94, 95% CI [0.92-0.95]) were less likely to report truancy.

Peltzer [25] showed that risk-behaviours (e.g. substance misuse) were a significant influential factor in mediating truancy. As part of an effort in the United Kingdom (UK) to eradicate substance misuse and promote mental health in schools, the European School Project on Alcohol and Other Drugs (ESPAD) was implemented. The results of this project indicated that the presence of psychiatric symptoms and risk-behaviours was strongly associated with truancy [26]. Authors concluded that having parental support was a potential protective factor for truancy risk. In a similar initiative conducted by the US, a national survey on drug use and health (NSDUH) was performed among a representative adolescent sample. The results of this survey found that truancy was robustly associated with externalizing problems and less parental support [27]. Involving parents in truancy intervention programs could be an essential component in improving school attendance and mental health among truant adolescents [28]. It can be postulated that just informing parents about their child's school attendance can theoretically reduce truancy rates and increase psychological well-being.

Truancy and mental ill-health

Conduct disorder, oppositional defiant disorder, behavioural disorder and depression have been found to precipitate and exacerbate truancy [29-32]. Steinhausen and colleagues [15] reported that there are common physiognomies shared among truant adolescents, such as anxiety,

aggression and internalizing problems. Adolescents who are truant often have difficulties with maladjustment [2], low self-esteem, negative self-image [33], social phobia [34] and attention deficit hyperactivity disorder (ADHD) [35]. However, it is apparent that there is still little known about the relationship between truancy, psychiatric symptoms and suicidality. An improved understanding of this relationship is essential for the development of scientifically sound prevention programs. Addressing psychological symptoms among truant adolescents could prove beneficial in truancy prevention interventions. At the same time, reducing truancy could be beneficial in improving adolescents' mental health. An inpatient cognitive-behavioural treatment (CBT) intervention possibly supports this theory. Results of this study showed that adolescents with chronic anxious-depressive school absenteeism that underwent the program reported less psychological symptoms and increased school attendance compared to the control group [36]. This suggests that truancy and mental ill-health should be addressed collectively.

2. Intervention programs for truancy

Evaluation of school-based programs

There are only a small proportion of studies that have actually evaluated the efficacy of truancy interventions. The majority of intervention programs often focus on reducing school absenteeism, without addressing the aetiology of truancy and its psychological correlates. The initiatives of such interventions are to decrease school absenteeism in order to improve school attendance. In a systematic review and meta-analysis, Tanner-Smith and Wilson [37] analysed 74 studies concerning the efficacy of dropout prevention programs on reducing school absenteeism. Studies included both randomized controlled trials and quasi-experimental studies. All studies were performed in the US, with the exception of one study. Results indicated that dropout programs had positive effects on reducing school absenteeism. Vocational-oriented and supplemental academic training programs were most favourable.

In the US, the Check and Connect program is a school-based intervention aimed at engaging students in school and supporting regular school attendance through mentoring and monitoring relationships between students, families and school staff [38]. In an evaluation of this program, results indicated that high-quality relationships between students and school staff were associated with higher school engagement; however, the depiction of truancy punitive discipline policies by schools negatively affected the efficacy of this intervention [39]. These outcomes suggest that punitive actions for truancy could be counterproductive. This is confirmed by Flannery and colleagues [40] who showed that repeated out-of-school suspension of truant adolescents actually accelerates truancy rates.

Evaluation of court system-based programs

Truancy programs in the US often utilize legal actions through the court system in order to handle chronic absenteeism. There are conflicting results concerning the effectiveness of such interventions. In the Ada County Attendance Court program, truant adolescents are petitioned to the court by school officials. The court summons both the adolescent and guardian. Community referrals are appointed by the judge in order to improve school attendance rates. The court monitors the results through further hearings and school records. Independent research analyses of

this intervention indicated that truancy decreased significantly after the first hearing in attendance court [41]; however, it is unknown if this improvement was sustained overtime.

In another court system-based intervention, truant students were collected by police officers and taken to the central Truancy Unit. Adolescents were then processed by police officers and assessed by social service personnel. Students received informal consultations with a social worker and were under compulsory silence. Outcomes showed that the Truancy Unit did not have an effect in the short-term assessment, and even had a negative impact on the long-term evaluation [42].

In many communities in the United States, truancy programs remain sanctioned. Resources for these truancy programs are focused on classifying, localizing and transitioning truant adolescents back into their respective schools and serving them with sanctions or citations. These intervention initiatives often include official arbitration, police involvement, deferment or remedial programs, which have not been shown to be effective in solving the underlying concerns fostering truancy [43].

3. Challenges for truancy interventions

As previously stated, the majority of the research published on truancy is primarily performed in the US. The need to prevent truancy and school drop-outs is primarily addressed through court ordered mandates; while, in Europe, there is relatively no data available. Studies on truancy are often descriptive in nature and do not address the psychological factors associated with truancy. There are only a small proportion of studies that actually evaluate the efficiency of truancy programs. Challenges in the implementation of interventions and empirically validated results on the short- and long-term outcomes of these programs are rarely mentioned [44]. The obvious lack of empirical studies performed to ascertain the effectiveness of truancy programs impedes our understanding of the condition. Descriptive and explorative studies are important to improve our knowledge of truancy; however, more studies evaluating the efficacy of truancy interventions are essential for determining if these programs successfully serve their targeted populations and improve the psychosocial functioning of truant youth [45]. This scientific information is vital for developing effective truancy policies in Europe that actually improve both school attendance and mental health among truant adolescents.

4. Objectives of the WE-STAY project

In the effort of further exploring the relationship between truancy and mental health and of developing effective prevention programs to prevent truancy, the WE-STAY project had the following objectives:

1. Gather information on truancy on European adolescents:

- estimate the prevalence of truancy,
- gather data on social-psychological and psychiatric correlates of truancy,
- gather data on school and family attitudes towards truancy.

2. Perform three intervention school-based programmes for adolescents, with objectives to reduce truancy rates and improve mental health of students and compare the results with an intervention based on the mechanistic control of truancy. The following interventions will be performed:

- Universal intervention, with an awareness program (TRUANCY-AWARE), aimed at reducing truancy by increased awareness of students, schools and families to seek psychological support and treatment;
- Professional screening and referral (TRUANCY-SCREEN) aimed at reducing truancy by early identification of psychological distress and mental health problems, and referral to professional treatment;
- Combined intervention that includes the Universal awareness program and screening by professionals with referral;
- Mechanistic intervention (TRUANCY-MIC) aimed at reducing truancy advocating parental and school control (communication by e-mail, sms, phone calls, letters).

3. Evaluate outcomes of all interventions, from a multidisciplinary perspective including social and psychological aspects.

4. Recommend effective, culturally adjusted models for preventing truancy and promoting mental health of adolescents in different European countries, by providing recommendation on best practices to prevent truancy and the associated mental health symptoms.

Project results:

1. Analysis of baseline data

1.1. Description of the sample and main evaluations

The final pooled WE-STAY database includes a total of 11,186 cases, 50% males and 50% females, with mean age 15.09 ± 1.3 (range 11-22). The sample size on which the analyses have been made varies on the basis of subjects excluded for missing values in the specific variables being analysed.

Pupils from 6 Countries and 65 different schools were recruited in the present project and were asked to complete a baseline. The questionnaire collected data regarding 435 variables and included: the global school-based pupil health survey (GSHS) (see <http://www.who.int/chp/gshs/en/> online), the school refusal assessment Scale-Revised for children (SARS-R) (Kearney, 2002), the Antisocial Beliefs and Attitudes Scale (ABAS) (Butler et al., 2007), the Coping Across Situations Questionnaire (CASQ) (Seiffge-Krenke, 1995), the WHO-5 Well being index (WHO-5) (see <http://www.who-5.org/> online), the strengths and difficulties Questionnaire (SDQ) (see <http://www.sdqinfo.org/> online), the Diagnostic interview schedule for children predictive scales (DPS) for Conduct Disorder (Shaffer et al., 2000), the beck depression inventory (BDI) (Beck et al., 1961), the Paykel Suicide Scale (PSS) (Paykel et al., 1974) and the Deliberate Self Harm Inventory (DSHI) (Gratz, 2001), the Parental Monitoring Scale (Small and Kerns, 1993) and the International Physical Activity Questionnaire (IPAQ) (see <http://www.ipaq.ki.se/ipaq.htm> online). A set of 36 stressful life-events were also investigated.

1.2. Truancy data

Out of 11,186 students, 11,041 provided information about truancy (98.7%; 145 missing; 50.3% females, mean age: 15.09 ± 1.31 ; range: 11-22). Truancy rates per month in the past year. 1,968 (17.8%) reported having skipped school three or more days per month without a valid excuse in the past year and these were considered as truant students.

Truant students were slightly more males than females (57% vs. 43%, $p < 0.0001$) and slightly older (15.5 ± 1.3 vs. 15.0 ± 1.3 , $p < 0.0001$). Although age and gender exerted only small-moderate effects, all the analyses were controlled for these variables.

Truancy across countries

Controlling for age and gender, a significant ($p < 0.0001$) association between truancy and country of pupil was observed.

Truancy and socio-demographic variables

Relevant associations were found between truancy and socio-demographic variables such as living with both parents ($p < 0.0001$), referred religiosity ('I am a religious person') ($p < 0.0001$) and having changed school the previous year ($p < 0.0001$). In particular, truant students referred less often to living with both parents, to be religious, and more often to having changed school the year before. No significant associations were observed with being born in the country, being citizen of the country, living in a foster family, social institution or foster care and religious affiliation.

1.3. Activities and Reasons when/to skipping school

Activities when skipping school

Activities when skipping school were analyzed separately in males and females. Males truant reported, when skipping school, mostly hanging out with friends (46.7%), sleeping (38.7%) and surfing internet (31.6%). Such rates were much lower in non-truant male students (respectively 16%, 14.9% and 11.9%).

Similarly, female truant students reported more frequently hanging out with friends (52.9%), sleeping (51.4%) and surfing internet (37.2%) but also staying at home alone (37.2%) and walking around town (31%). Non-truant female students reported much lower rates (16.3%, 16.2%, 9.7%, 10.2% and 9.1% respectively).

Reasons for skipping school

Male truant students most frequently reported to skip school because they were too tired (40.8%) and had more interesting things to do (24.1%). Again these reasons were reported less frequently in non-truant students (14.6% and 6.6%).

Similarly, female truant students reported more often skipping school because of being too tired (49.1%), but also because they did not do homework (26.7%), because of a difficult exam or test on that day (22.4%) or other friends were also skipping (23.4%). Again, non-truant female students reported lower rates (17.1%, 10%, 7.1% and 8.8% respectively).

1.4. Children school refusal and truancy

The School Refusal Assessment Scale - Revised for children (SARS-R) provides four indicators of functional conditions leading to truancy:

- to avoid school-based stimuli that provoke a general sense of negative affectivity;
- to escape aversive school-based social and/or evaluative situations;
- to pursue attention from significant others;
- to pursue tangible reinforces outside of school.

Analyzing these four indicators, truant students scored all significantly higher, on all indicators, as compared to non-truant students. Controlling for age and gender, all indicators maintained significant associations with truancy.

Bullying and truancy

Out of 10,580 responders, 1,702 students reported to have been victims of bullies at least once or two times in the past year (16.1%). The rate of being bullied was significant higher in truant (20.4%) than in non-truant students (15.2%) (p less than 0.0001).

Subtypes of bullying and truancy

Specific types of bullying were also evaluated. Being bullied about 'race and colour' and 'threatened or forced to do things' were the most relevant type of bullying associated to truancy, followed by 'being hit, kicked or pushed', bullying 'on mobile phone' and 'money or other things taken away or damaged'.

Duration of bullying, assistance of a teacher, other adults in school were not associated to truancy, though rates of parents' school contacts to stop bullying were higher in truant students (pless than 0.0001).

Affiliation in/outside school

The administered questionnaire included also two questions about feeling to belong to a group in school and outside school. Though rates of feeling to belong to a group inside school were lower in truant students (77.8% vs. 79%), no significant associations were observed.

1.5. Lifestyles and truancy

Lifestyles in sleep, physical activity and Body mass index (BMI)

Here, we evaluated potential effect of number of hours of sleep, average physical activity per month, week, and day, considering vigorous and moderate physical exercise, walking, as well as hours/minutes of sitting. We also evaluated BMI in relation to truancy risk. The average number of hours of sleep during school-days was significantly different between truant (Mean±SD: 7.1±1.7) and non-truant pupils (7.6±1.4; pless than 0.0001). A higher BMI was associated with truancy (21.3±3.6 vs. 20.8±3.3; p=0.028). Truant pupils showed also a lower mean number of days in which they do moderate physical activities (e.g. carrying light loads, bicycling at a regular pace) and walked for at least ten minutes, during the past week (2.2±2 vs. 2.4±2; p=0.003).

Lifestyles related to the use of television and computer

Relevant differences were observed between truant and non-truant students in terms of time spent in watching television, playing computer games and surfing internet (not for work/study purposes). Truant students spent more hours per day in watching TV, surfing internet (not for work/study purposes) and playing computer games than non-truant students.

As risky behaviours we evaluated cigarette smoking, alcohol consumption, drug use and physical fights. All risky behaviours were significantly more frequent in truant students than non-truant students, particularly 'ever smoked cigarettes'.

1.6. Parents' monitoring and truancy

We considered the following variables within the section of 'parents' monitoring', as referred by students:

- 'parents know where the child is after school'
- 'parents are expected to be called if the child is going to be home late';
- 'parents are told who the child is going to be out with, before he/her goes out';

- 'parents know where the child is when he/her goes out at night';
- 'parents are told about the plans the child has with his/her friends';
- 'parents ask where the child is going, when he/she goes out'.

Poor parental monitoring on all items was significantly more reported by truant students.

1.7. Antisocial behaviour, Conduct Disorder symptoms and truancy

Antisocial behaviour (ABAS)

The Antisocial Beliefs and Attitudes Scale provides three measures of antisocial behaviour:

- Rule non-compliance;
- Peer conflict;
- Severe aggression.

Truant students scored significantly higher (pless than0.0001) on all subscales as compared to non-truant students, indicating more antisocial tendencies in truants.

Conduct disorder

The DISC predictive scales (DPS) for conduct disorder is a self-evaluation version of conduct disorder according to DSM-IV criteria. We here calculated the number of symptoms referred by students and we found truant students reporting more average symptoms (Mean±SD: 3.8±3.3) than non-truant ones (Mean±SD: 1.5±2.2). Controlling for age and gender, the association between the number of conduct disorder symptoms and truancy was relevant (pless than0.0001).

1.8. Truancy and well-being, behavioural and emotional difficulties, stress and coping

Well-being

Pupils' well-being was evaluated through the five items of the WHO-5 (Well-being index of the World health Organization). Truant students scored significant lower than non truants (pless than0.0001), so showing a poorer well-being.

Strengths and Difficulties

The strengths and difficulties questionnaire covers common areas of emotional and behavioural difficulties and includes five different subscales:

- Emotional symptoms;
- Conduct problems;
- Hyperactivity;

- Peer problems;
- Prosocial.

A total score is calculated by summing the scores from all the subscales except the prosocial one.

At the SDQ evaluation, truant students scored significantly higher on the total score and on all subscales, with the exception of the 'Prosocial scale'. At the opposite, 'prosocial' behaviour was protective against truancy (pless than0.0001).

Stressful life events

A set of 36 stressful life events occurred in the past year were also evaluated, such as loss of relatives/friends, divorce/separation of parents, illness, job problems in relatives or separations from close relatives, falls at school, break-up with girl-/boyfriends, problematic physical pubertal changes, experience of dangerous situations and so on. Testing the total number of stressful life events in association with truancy, significant effects were detected.

Coping strategies

The Coping Across Situations Questionnaire (CASQ) provides three measures of coping:

- Active coping;
- Internal coping;
- Withdrawal.

Truant students scored significantly lower on active and internal coping as compared to non-truant ones, on the contrary they scored significantly higher on the 'withdrawal' coping strategies.

1.9. Depression, anxiety and truancy

Depression symptoms were evaluated by the Beck Depression Scale (BDI-II). On this scale, truant students scored significantly higher than non-truant ones.

Anxiety was evaluated through the question 'Do you suffer from nervousness, uneasiness or anxiety?'. Also here, truant students reported significantly higher mild and severe anxiety.

1.10. Suicidal ideation and suicide attempt and truancy

Suicidal ideation during the past year and during the past two weeks was investigated through the paykel suicidal scale (PSS). Truant students showed significantly higher suicidal ideation both during the past year and during the past two weeks.

History of lifetime suicide attempt was reported by 525 students (4.9%). Rate of referred suicide attempt was more than doubled in truant students than in non-truant ones.

1.11. Self harm and truancy

Self-harm (i.e. self-injury behaviour without intent to die) was evaluated by the Deliberate Self Harm Inventory (DSHI). Any kind of deliberate self-harm, at least once in the past year, was reported by 21.1% of students and 3.2% lead to medical treatment or hospitalization. The rate of self-harm was more than 1.5 higher in truant students than in non-truant ones and the difference was relevant. Further, self-harm behaviours were significantly more likely to requiring medical treatment or hospitalization in truant students than in non-truant ones.

1.12. Overall parents' sample and main evaluations

Parents of enrolled students were asked to complete a questionnaire to collect data about their socio-demographical features, perception of truancy in their children, values and beliefs about skipping school, bullying, safety at school, academic progress, their attitudes in child monitoring and so on, as well as beliefs about teachers' and their own responsibility about child behavior at school, and beliefs about child mental health. The questionnaire also included the parent version of the School Refusal Assessment Scale-Revised (SRAS-R) (Kearney, 2002) and of the Strengths and Difficulties Questionnaire (SDQ) (see <http://www.sdqinfo.org/> online). The questionnaire also included the WHO-5 Well-being index (WHO-5) (see <http://www.who-5.org/> online) and the Beck Depression Inventory (BDI-II) (Beck et al., 1961). Anxiety was evaluated through the question 'Do you suffer from nervousness, uneasiness or anxiety?'.

Considering the total sample of 11,186 pupils, 34% of parents filled in the baseline evaluation questionnaire.

Out of 11,041 students enrolled and providing information about truancy, only 3,747 parents consented to fulfil and return the questionnaire (33.9%). Comparing truant and non-truant pupils, parents of non truant ones answered more frequently the questionnaire (21.7% vs. 36.6%).

The parent fulfilling the questionnaire was the mother in the majority of cases (81.6%). The level of education of both mothers and fathers was most frequently high school/vocational diploma (53.7% and 53.8% respectively) and they were both more frequently born in country (92.7% and 92.1% respectively).

1.13. Parents' awareness of children' truancy

Comparing truancy as reported by students to that reported by parents, significant difference was observed: whilst concordance was high between parents and children in the case of non-truant children, concordance was low between parents and child in the case of truant students. 75% of parents of truant students referred their children as non-truant.

1.14. Parents' evaluation of their child school refusal (SRAS-R, Parent version)

At the parent evaluation of School refusal in children, parents of truant students reported higher scores on all four indicators of school refusal (1- to avoid school-based stimuli that provoke a sense of negative affectivity; 2- to escape aversive social or evaluative situations; 3- to

pursue attention from significant others; 4- to pursue tangible reinforces outside of school).

1.15. Parents' opinion about bullying

Parents opinions about bullying problems in their child's school

Overall, 29.3% of parents referred bullying problems in their child's school, 38.8% referred no bullying problems and the remaining 31.8% reported not to know. Response rates of parents of truant and non-truant students were similar.

Parents opinions about bullying risk factors

More than 50% of parents thought that too much violence in TV, in videos and videogames, and not sufficient parental control contribute to bullying. Thirty - forty percent of parents also indicated gangs, alcohol and drugs and too much tolerance of bad behaviours at school. Parents of truant and non-truant students did not answered significantly different.

1.16. Parents' monitoring and children truancy

Parents of truant pupils overall reported less monitoring of their children when they are not at home or school. Consistently with that reported by children, parents who never/rarely know where the child is after school (monitoring 1), are expected to be called if the child is going to be home late (monitoring 2), are told by the child where is going before he/she goes out (monitoring 3), know where the child is when he/she goes out at night (monitoring 4), are told about the plans the child has with his/her friends (monitoring 5) and ask where the child is going when he/she goes out (monitoring 6) have more likely truant children.

1.17. Parents' believes about what is important at school

Parents were asked to evaluate the importance, in their opinion, of a number of issues related to school. Overall, parents of non-truant students gave more importance to all issues, with the exception of school meals, which were slightly evaluated as more important by parents of truant students. However, relevant differences were found on bullying, academic progress, safety, gangs or violence, drugs and alcohol use, teacher's involvement, abusive relationships and truancy, which were evaluated as more important by parents of non-truant students than parents of truant ones.

1.18. Parents' feelings to receive sufficient information from schools

Parents were asked if they feel to receive sufficient information from school about a number of issues concerning their children at school. Overall, parents of non-truant students reported more satisfaction about information coming from school. Significant differences were observed on 'extracurricular activities', 'school policies', 'transition from one level to the next', 'behavioural/discipline problems' and 'what child is taught'.

1.19. Parents' beliefs about truancy and their and school's responsibilities

Parents' and school's responsibilities

The questionnaire also included questions about what the parents think about themselves/school responsibility for children not going to school. Parents of non-truant pupils did agree more with the opinions that 'parents should be fined if their children do not go to school'. It is interesting to observe that parents of truant pupils agreed more with opinion concerning school's responsibilities (i. e. 'It is the school's responsibility to make sure their children go to school').

Parents' beliefs about truancy in children

Overall, parents of truant students agreed significantly more with the opinion that 'now and again it's OK for a child to take the day off school', while they agreed significantly less with the opinions that 'truants can get into trouble and commit crime'.

1.20. Parents' academic expectancy and Truancy in Children

When asked about their expectancy of their child's academic progress, parents of truant students reported significantly less confidence that their child will graduate at high school and particularly at university, as compared to parents of non-truant children.

1.21. Parents' awareness of mental health in the young

Parents' opinion and knowledge

Parents of truant and non-truant students reported similar responses when asked if they know enough about mental health in the young (about 50% 'yes'), if they want to learn more (about 80% 'yes'), if they have ever spoken to their children about depression, suicide or mental illness (more than 50% 'yes'). Nevertheless, parents of truant students significantly less thought that 'a child can have an illness of emotions that can be treated by a doctor' as compared to parents of non-truant students (62% vs 71.3%; $p < 0.0001$).

What the parents' would do if their child would have mental health problems

More than 50% would speak directly with the child, turn to a psychiatric/mental health organization or consult with spouse or other family member. Nearly 40% of them would also consult the school or a teacher, whilst less than 10% would turn to a friend or another parent or do something else. Only the 0.9% would keep it to him/herself. Parents who answered not knowing what to do were 1.5% of all.

Parents of truant and non-truant students gave similar responses, though parents of truant students would turn less to school/teachers (27.9% vs 39.5%; $p = 0.001$) than parents of non-truant students.

1.22. Parents' evaluation of children strengths and difficulties (SDQ - Parent version) and truancy

Parents of truant students evaluated their child as having more conduct problems, hyperactive symptoms, less prosocial attitudes and more total difficulties as compared to parents of non-truant students. Findings are in line with those self-reported by students, though truant students also reported slightly more emotional symptoms.

1.23. Well-being, anxiety and depressive symptoms in parents and truancy in children

No differences were observed between parents of truant and non-truant children on well-being, evaluated through the WHO-5. Nevertheless, parents of truant students reported significantly more depressive symptoms at the BDI-II evaluation than parents of non-truant students.

Anxiety (mild/severe) in parents was not associated to truancy in children.

2. Analysis of 1-month follow-up data

2.1. 1-month follow-up descriptive data

Allocation to intervention arms

At baseline, pupils were allocated in each country randomly to the 4 interventions' arms with no relevant discrepancies of allocation across countries.

Pupils evaluated at 1-month follow-up

The 1-month follow-up evaluation has been completed by 9,417 pupils (84.2%).

Pupils completing the 1-month follow-up evaluation significantly differ across countries in the intervention arm they were allocated to (pless than0.0001).

Nevertheless, allocation of truant and non-truant pupils to the different interventions' arms was rather homogeneous.

Pupils missed at 1-month follow-up

1,769 (15.8%) pupils did not participate to the first follow-up evaluation. Of these, 468 (27.2%) were truant at baseline. The majority was male (54.5%) and with a mean age of 15.2±1.2 years.

2.2. Overall effects of interventions

Considering the entire sample, after one month from the intervention, pupils showed a significant decrease in school refusal drives (SRAS-R 1, 2 and 3). Furthermore, the scores on SDQ subscales emotional symptoms, conduct problems and peer problems also significantly decreased as well as the total difficulties scores. Finally a significant improvement was observed on well-being (WHO-5), prosocial subscale (SDQ) scores, active and internal coping strategies (CASQ).

2.3. Truancy-Screen

Significant decreases were observed in school refusal drives (SRAS-R 1 and 3). Significant lower scores for emotional symptoms, conduct problems, hyperactivity and total difficulties at the SDQ were also obtained. Furthermore, the scores on well-being (WHO) and active and internal coping (CASQ) became significantly higher at 1-month follow-up.

Considering truant pupils only, significant changes were observed in school refusal drives 1 and 3 (SRAS-R), emotional symptoms, conduct problems, hyperactivity and total difficulties at the SDQ and in active and internal coping strategy (CASQ).

2.4. Truancy-Aware

Significant decreases were observed in school refusal drive concerning the pursuit of attention (SRAS-R). Emotional symptoms, hyperactivity and total difficulties at the SDQ significantly decreased. A significant improvement in well-being (WHO), prosocial subscale (SDQ) and active and internal coping (CASQ) was also detected.

Considering truant pupils only, significantly reduced scores were observed in school refusal drives 3 (SRAS-R). Emotional symptoms, conduct problems, hyperactivity and total difficulties at the SDQ also significantly decreased. On the contrary, well-being (WHO-5) and active and internal coping (CASQ) significantly rose.

2.5. Truancy-Combined

This intervention had significant impact on school refusal drives 'escape from aversive social situations' and 'pursuit of attention' (SRAS-R). Emotional symptoms, hyperactivity and peer problems as well as total difficulties at the SDQ significantly decreased. An increase in well-being (WHO), prosocial subscale (SDQ) and active and internal coping (CASQ) was also detected.

Considering truant pupils only, significantly reduced scores were observed in school refusal drive 'pursuit of attention' (SRAS-R), emotional symptoms, hyperactivity, peer problems and total difficulties at the SDQ. An increase in well-being (WHO-5) and in active coping strategy (CASQ) was also observed.

2.6. Truancy-Mic

The school refusal drives (SRAS-R 1, 2 and 3) showed a significant reduction. Furthermore, emotional symptoms, hyperactivity, peer problems and total difficulties at the SDQ also decreased. An increase in well-being (WHO), prosocial subscale (SDQ) and active coping strategy (CASQ) was also noticed.

Considering truant pupils only, significant changes were observed in school refusal drives 1 and 3 (SRAS-R) and in well-being (WHO-5).

3. Analysis of 12-month follow-up data

3.1. 12-month follow-up descriptive data

Pupils evaluated at 12-month follow-up

A total of 8,768 (78.4%) completed the 12-month follow-up evaluation.

Across country, a small difference was observed in pupils completing the 12-month evaluation ($p=.001$).

Pupils missed at 12-month follow-up

Out of 2,418 (21.6%) pupils lost at 12-month follow-up, only 637 were truant at baseline (27%). They were mostly males (56.1%) and with a mean age of 16.3 ± 1.3 years.

3.2. Overall changes in truancy

Truant pupils after completing any intervention, including the Mechanistic, became non-truant in the 52.2% of cases, and did not differ from non-truant pupils. Age and gender did not have any impact on change in truancy rates.

Even considering different levels of truancy (never or once per month, 2-4 days per month, 5 or more times per month), at follow-up, more than 80% of all pupils' reported low levels of truancy, and more than 10% moderate levels of truancy, with no significant differences across groups ($p=0.14$).

3.3. Changes in truancy depending on intervention arm

In Truancy-Screen, 47.8% of truant pupils at baseline were no more truant at follow-up. In Truancy-Aware, 51.8% of truant pupils became non-truant after this intervention. In Truancy-Combined, 58.9% of truant pupils were no more truant at follow-up. In Truancy-Mic, 50.6% of truant pupils became non-truant.

None of the baseline variables had any relevant effect on change in truancy at follow-up. In all the intervention arms, a significant reduction in truancy rates was observed.

Comparison among interventions

Considering all pupils, the highest rates of non-truancy at follow-up was observed in the 'mechanistic' intervention. Considering only truant pupils at baseline, the highest rates of non-truancy at follow-up were obtained in the 'Combined' intervention. Combination of interventions constituted an important help for truant pupils.

Considering truant pupils at baseline, significant differences were observed comparing 'truancy-combined' with 'Truancy-Mic' ($p=0.045$) and 'truancy-screen' ($p=0.004$). Not relevant differences were observed comparing two by two the other interventions.

3.4. Overall effects of interventions

To be allocated to an intervention/control condition, whatever the allocation was and independently from pupils' truancy status, significantly decreased school refusal drives (SRAS-R), peer conflict (ABAS 2), conduct disorder (CD - DISC Predictive Scale) symptoms, depression (BDI-II), suicidal ideation (PSS) and emotional symptoms, conduct problems, peer problems and total difficulties on SDQ. Moreover a

significant improvement was observed on well-being (WHO-5), prosocial subscale (SDQ) scores, active and internal coping strategies (CASQ).

3.5. Truancy-Screen

Significant decreases were observed in school refusal drives (SRAS-R), conduct disorder (CD) symptoms, depressive symptoms at the BDI-II, suicidal ideation during the past year (PSS), emotional symptoms, conduct problems, hyperactivity and total difficulties at the SDQ. Furthermore, the scores on well-being (WHO) and active and internal coping (CASQ) became significantly higher at 12-month follow-up.

Considering truant pupils only, significant changes were observed in school refusal drives (SRAS-R), peer conflict (ABAS), conduct disorder (CD) symptoms, depressive symptoms at the BDI-II, suicidal ideation during the past year (PSS), hyperactivity at the SDQ and in internal coping strategy (CASQ).

3.6. Truancy-Aware

Significant decreases were observed in school refusal drives (SRAS-R), peer conflict (ABAS), conduct disorder (CD) symptoms, depressive symptoms at the BDI-II, suicidal ideation (PSS), conduct problems, hyperactivity and total difficulties at the SDQ. An increase in well-being (WHO) and active and internal coping (CASQ) was also detected.

Considering truant pupils only, significantly reduced scores were observed in school refusal drives (SRAS-R), conduct disorder (CD) symptoms, depressive symptoms at the BDI-II, suicidal ideation during the past year (PSS), conduct problems at the SDQ.

3.7. Truancy-Combined

This intervention had significant impact on school refusal drives (SRAS-R), peer conflict (ABAS), conduct disorder (CD) symptoms, depressive symptoms at the BDI-II, suicidal ideation (PSS), emotional symptoms, conduct problems, hyperactivity and total difficulties at the SDQ. An increase in well-being (WHO) and active and internal coping (CASQ) was also detected.

Considering truant pupils only, significantly reduced scores were observed in school refusal drives (SRAS-R 1, 3 and 4), peer conflict (ABAS), conduct disorder (CD) symptoms, suicidal ideation during the past year (PSS), emotional symptoms, conduct problems and total difficulties at the SDQ. An increase in well-being (WHO-5) and internal coping strategy (CASQ) was also observed.

3.8. Truancy-Mic

The Truancy-Mic sample showed a decrease in school refusal drives (SRAS-R), peer conflict (ABAS), conduct disorder (CD) symptoms, depressive symptoms at the BDI-II, suicidal ideation during the past year (PSS), emotional symptoms, conduct problems, hyperactivity and total difficulties at the SDQ. An increase in well-being (WHO) and in all the coping strategies (CASQ) was also noticed.

Considering truant pupils only, significant changes were observed in school refusal drives (SRAS-R), peer conflict (ABAS), conduct disorder

(CD) symptoms, suicidal ideation during the past year (PSS), conduct problems at the SDQ and active coping strategy (CASQ) .

Potential impact:

1. Potential impact of WE-STAY main findings and recommendations

Problems of school attendance, which may take the form of truancy or school refusal have a prominent place in public health as well as in child and adolescent psychiatry. School performance, involvement in bullying and frequent absences from school may be indicators of not only cognitive and social skills but also mental health. Mental disorders may interfere with learning and adjustment in many ways and failure in schoolwork often makes an adolescent more likely to drop-out from school. It has also been hypothesized that adolescents who are frequently absent from school present an increased risk of both internalizing and externalizing mental disorders. However, very few studies are available in the medical literature to support these hypotheses.

The Working in Europe to stop truancy among youth (WE-STAY) was developed in this precise context. Mental health promotion in school should comprise approaches that make school safe, offering interventions for pupils at risk. The main objective of WE-STAY was to identify the most effective evidence-based means to reduce truancy rates and improve mental health among adolescents. It has been performed by a consortium of ten European countries with the implementation of intervention in six countries: Estonia, Germany, Italy, Israel, Romania and Spain. Sweden was the coordinating centre of the project. France, Hungary and Slovenia had the role to perform other important tasks such as translation, cultural adaptation and dissemination.

The WE-STAY project was successful in recruiting a large sample (N=11,186) of high school pupils and evaluating a wide range of measures related to demographics, mental health, and the social context. Overall it has been identified that 17.8% of the evaluated students are to be considered truant as they skip school without a valid motivation at least 3-4 times every month. Significant country differences were found in truancy with the lowest rate reported in Germany (8.3%) and the highest rate reported in Israel (32.5%). The major implication of these findings is that truancy is a very relevant phenomenon that affects on average 1 out of 5 adolescents in Europe and needs to be addressed by the European school system.

According to our data, socio-demographic features did not significantly distinguish truant and non-truant students, with the exception of 'living with both parents', which exerted a protective effect. This may be explained by a less effective monitoring of the children in single-parent families. Indeed, inadequate parents' monitoring on children activities outside home was strongly related to increased rates of truancy.

Truancy was explained by different motivations in students, but we found the need 'to pursue tangible reinforcements outside of school' (SRAS scale, factor 4) explaining the largest variance, as reported by both the youngsters and their parents. Therefore, young more prone in seeking gratification outside the school setting are at higher risk for truancy. Truant students reported most frequently that hanging out with friends, surfing the Internet or walking around town was their preferred activity when skipping school. A further frequent activity during skipped school days was 'sleeping'. This is consistent with the fact that truant students sleep less during school-days (~7 hours) than non-truant ones, probably because they do late watching TV, surfing internet, playing

computer games (activities importantly related to truancy), or going out at night. However, less sleep in truant students may be also explained by sleep problems induced by psychological distress.

Risk behaviours such as heavy alcohol drinking, smoking, drugs use were strongly more frequent in truant students than in non-truant ones. This data may be explained by different reasons, which may be related to each other. On one hand, often young people engage in such behaviours because of affiliation needs (Park et al., 2009). This interpretation is in line with the idea that truant students are more prone to seek gratification outside the school setting which allows for such non-ordinary behaviours. On the other hand, it is also well known that involvement in risk behaviours may be motivated by psychological and interpersonal difficulties (Lyvers et al., 2010). Furthermore, due to affiliation needs, problematic young may be more prone to cope with them through aberrant behaviours instead of more genuine and safe ways of self-expression (Kuntsche et al., 2005). Therefore, students who engage themselves repeatedly in risk behaviours should be strictly monitored both for truancy risk, underlining potential psychological drives, as well as negative outcomes on physical and mental health.

Truant students also had more severe problems in terms of personality antisocial traits and conduct disorder symptoms, as demonstrated by the ABAS, DPS and SDQ scales. These youngsters also had problems in terms of adaptation to problematic situations, as they referred avoiding, retracting and alienating in front of problems ('withdrawal' at the CASQ), to a higher degree than non-truant students. Truancy may also be in part explained by feelings of nervousness and uneasiness, sadness and grief, displeasure in own life and death thoughts. Interestingly, more than 30% of truant students (vs. 19% non-truant) reported having performed some kind of self-harm and more than 9% (vs. 4% non-truant) reported a lifetime history of attempted suicide. Truant pupils also reported significantly higher levels of depression and anxiety. These data support the hypothesis that truancy it's not a mere behavioural problem but it's strongly associated with poor mental health, including suicidality. Consequently, preventive interventions for truancy that are exclusively based on control appear to be a very coarse and inadequate approach to the problem. Unfortunately, according to previous research and according to the truancy mapping effort made within this project, truancy prevention interventions, with few exceptions, do not focus on health and mental health. Mechanistic control based interventions are virtually the only ones that are implemented across the world.

Within the WE-STAY project very interesting results have been acquired through the involvement of parents in the evaluation of truancy, as a phenomenon affecting not only the pupil but the whole family. The first relevant information is related to response rates of parents that were low or very low in all intervention countries. On average, one out of three parents accepted to participate in the study and fill in the questionnaire, possibly revealing a scarce interest of many parents in this phenomenon. Another explanation could be parents' reluctance to admit insufficient monitoring of their children school attendance. Self-report of truancy among adolescents and their parents were matched; interestingly, 25% of the parents did not know or suspect their children skipped school without a valid reason. Moreover, truancy appeared to be strongly related to parental monitoring. Knowing the whereabouts of their children, being aware of who are their friends, knowing and asking about their plans, were all factors associated with increasing truancy. Parents

beliefs and attitudes toward schools and school related values were important factors as well. Parental depression was also found to be associated with truancy. Parents of truant students seemed to be more prone to delegate to the school the responsibility to control their children ('Teachers should always know the reason why a student is absent'). It is also to be noted that parents of truant students were less aware than parents of non-truant students that psychological distress in the young 'may be treated by a doctor', potentially indicating less information about mental problems in the young. These findings suggest that the role of the family is strongly related to truancy; the level of parental control of children activities', regular attendance to school, as well as parental attitudes towards school, academic progress and truancy, plays a relevant role in truancy risk. The implementation of specific programs targeting parental behaviours, attitudes and beliefs toward school may be of help in truancy prevention.

In the WE-STAY project four different interventions were performed and evaluated to prevent truancy and improve mental-health of adolescents. The interventions were based on different approaches and empowered different subjects as actors of the preventive activities. The first intervention (TRUANCY-AWARE) was an awareness increasing intervention based on three components 1) a didactic and pedagogical booklet; 2) standardized interactive sessions with the pupils, including lectures and role play and 3) didactic posters that were placed on the walls of the classroom. The second intervention (TRUANCY-SCREEN) was a screening program with the objective to identify truant students with health-risk behaviours and mental health problems and refer them for treatment when necessary. The third intervention (TRUANCY-COMBINED) included a combination of the awareness increasing and the screening intervention. The fourth intervention (TRUANCY-MIC) was a mechanistic intervention based on simple measurement and control of truancy rates with a report that was sent back to the pupils and/or their parents. It has not been possible to follow exactly the same procedure in each country because of different rules and legislation. While many schools already had a monitoring system into place, this was used and evaluated for the purposes of this intervention. In the rare cases where there was no system, a control and report system was developed and implemented by the WE-STAY staff. Parents were sent or not sent this report if this was required/forbidden by the law.

Most pupils have welcomed and successfully completed the programs (participation rate: 88%), indicating a good feasibility of all interventions.

Nearly 60% of the students who were truant at baseline, were not truant at the 12 months follow-up after being exposed to the combination of Awareness and Screening programs. This reduction was significantly higher than the reduction induced by the truancy control intervention alone or by the screening intervention alone; it was not significantly higher than the Awareness intervention alone. The major implication of this finding is that even if mechanistic control of truancy is capable of considerably reducing truancy rates, interventions that include a mental health-based component are significantly more effective in reducing truancy.

1.1. Screening Program (TRUANCY- SCREEN)

After the baseline evaluation the students in the Screening arm were considered positive if they exceeded the cut-off values for both, truancy

and the strengths and difficulties questionnaire (SDQ). These pupils have then been contacted either by the clinical interviewer (psychiatrist/psychologist) or the 'facilitator' via telephone, to set up an appointment for an interview with the adolescent. The structured clinical interview has been carried out by clinical staff (registered clinical psychologists or psychiatrists). The aim of the interview was to find pupils who were truant because of an emotional problem or a conduct problem. During the interview the MINI-KID questionnaire was administered to pupils. Those who were diagnosed a psychiatric disorder were subsequently referred to the mental healthcare system.

Of the 2574 pupils who entered the initial screening at Stage 1 24.7% (n=637) were screened as being at-risk, and 480 (75.3%) participated in the Stage 2 clinical interview. 304 of the Stage 2 attendees, which means 11.8% of the entire sample, required referral to the mental healthcare system for treatment of psychological problems.

The screening program significantly decreased truancy of pupils at the 12 month follow-up. Almost half (47.8%) of the pupils who were truant at baseline and underwent the screening program were not truant at the 12 month follow-up. This decrease, however, was significantly lower than the decrease measured in other arms of WE-STAY. The screening intervention caused significant reductions at the 12 month follow-up in depression, anxiety, suicidal ideation, emotional symptoms, conduct problems, hyperactivity and a significant increase in well-being. Increase in well-being was already significant at the 1 month follow-up. When evaluating only truant students, the screening intervention significantly reduced depression, anxiety, suicidal ideation and hyperactivity.

The novelty of the screening program used in WE-STAY was the inclusion of truancy as a criteria to identify pupils at risk, while previous studies have primarily focused on emotional problems, substance abuse and suicidal behaviour. As many as 304 pupils (11.8%), out of the 2574 screened, presented mental health problems that required mental healthcare. Our results strongly support a high burden of mental health disease, in adolescent populations, and call for further public health attention. A previous qualitative analysis, performed in the context of the SEYLE project, revealed that an important contributing factor for adolescent help-seeking behaviours and compliance to the interview was the proximity and short waiting times for the clinical interview and positive attitudes among parents. The predictive value concerning the average travel time from pupils' school to the study centre was examined; results indicated a significant negative correlation between travel time and attendance to the clinical interview. In the WE-STAY project, clinical interviews were administered in the schools. These allowed to have a reasonably high attendance rate of pupils to the interview (greater than 75%). The results of the screening arm also suggest that attention to truancy in addition to psychopathology is critical in facilitating prevention and early intervention and that screening in schools can be a valuable approach in detecting students with psychological problems that require subsequent mental healthcare. However, the feasibility of large scale screening programs can be problematic. The reception of the screening intervention by pupils, parents and schools was less favourable in comparison with the Awareness intervention.

1.2. Awareness increasing intervention (TRUANCY-AWARE)

The Awareness increasing intervention administered in WE-STAY was significantly effective in reducing truancy rates at the 12 months follow-up. It was also significantly effective in improving mental health of pupils. A significant increase was observed in well-being already 1 month after the intervention. Significant reductions at the 12 month follow-up were measured for depression, anxiety, suicidal ideation, conduct problems and hyperactivity. Coping strategies appear to improve significantly as well. The Awareness intervention appeared to decrease depressive symptoms and improve well-being also when examining only truant students.

Upon the completion of the active WE-STAY interventions and the three waves of data collection, a qualitative sub-study was undertaken in order to gain additional information about the Awareness intervention and students' experience of the study. 32 Awareness participants across four of the sites (Estonia, Italy, Romania, Spain) were interviewed in depth about the study, helping the researchers to gain a deeper understanding of the Awareness program in the field as well students' opinions and experiences of truancy. The primary investigators of the sub-study were an anthropologist and psychologist both with extensive experience of qualitative semi-structured interviews and analysis of those. The students' memories and perceptions of the program differed and seemed to depend on individual history and interest as well to be related to how the entire class participated and thought of the program. Most of the students remembered well the questionnaire, which in fact turns out to be quite an intensive 'intervention' in their eyes, seeing that they have to answer to it three times over the year and every time it takes more than one hour to fill it in. Moreover, many students brought up topics such as hurting yourself or others as being a bit shocking, or at least not connected to their lives, so they remembered the questionnaires very well. The results also show that those students who actively participated in the role-plays remember much more from the Awareness program. Moreover, those students who expressed that the topics were relevant to them personally or if they were interested in 'psychology' or the humanities remembered more from the program. Most of the students, notwithstanding the country, said that they had never participated in role-plays to learn something and they seemed to enjoy it, at least more than the classes they missed when participating. It was quite obvious that many students were not aware that they were in fact learning something, as they saw the role-plays like a 'game'. Consequently, role-play is in fact one of the most appropriate ways to learn new life-skills. Most of the students openly spoke also about truancy and had many opinions about it. The differences on the subject were large, depending mostly on their personal histories with skipping school but also on how lenient or not the schools were. The reasons for skipping school varied from skipping a specific subject, class or teacher, or because school was boring, the subject too difficult or too easy, but in general most of the students described skipping school as a communal activity, something they did with their friends. Many of the Italian, Romanian and Spanish students described going to the local café to have coffee and smoke cigarettes when they were skipping school. The Estonian, as well as many of the Spanish students would just 'hang around', meaning they were staying close to the school, but not going to class. Some students mentioned skipping school to have time to study for other subjects, practice other activities (such as music or sports) or because they had to take care of

a sick family member or help their parents with something outside of school.

For most of the students that were interviewed, skipping school was not understood by them as related to mental health issues. A more smooth transition from general mental health themes and that of truancy is needed in the program. Some students pointed out that more space should be allocated to truancy in the booklet. More time allocated to the role-plays on this topic could help, as the students seem to remember mainly the role-plays and to a lesser extent the lectures and booklets. Also, the students' personal stories of skipping school need to be incorporated better. More in-depth role-plays, allowing the students to come up with their own examples could be very helpful and also very interesting from a research perspective. It is important that all the students participate in the role-play as this did not seem to be the case; those who did participate clearly remembered more from the awareness program. This can be accomplished through smaller groups, more role-play sessions and more freedom to control the content of the role-plays - which means more time and resources are needed for implementation.

1.3. Combination of awareness and screening interventions (TRUANCY-COMBINED)

This arm of the study comprised both, the TRUANCY-AWARE and the TRUANCY-SCREEN interventions. Implementation of each intervention has been identical to the interventions in the other active arms. Interventions have been performed in sequence according to a structured plan where the Awareness intervention was carried out first.

The combined intervention significantly reduced the proportion of truant students. This reduction was significantly higher than the screening intervention and the truancy control intervention but was not significantly higher than the awareness increasing intervention.

The combined intervention significantly increased the well-being of pupils. The increase in well-being was visible at both, 1-month and 12-months follow-up. A significant decrease of psychiatric symptoms in terms of depression, anxiety, suicidal ideation, emotional symptoms, conduct problems and hyperactivity was also observed. When evaluating truant students, significant decreases in depression and suicidal ideation and significant increases in well-being were also observed.

Even if the combined intervention had higher effects than screening alone in reducing truancy, the positive effects, in terms of mental health improvement, of the combined intervention were not significantly higher than the effects of either intervention (awareness or screening) administered alone. On the other hand combining both interventions on the same subjects appeared to be highly demanding in terms of time and resources. This fact has been reported unanimously by each study site and regarded both, intervention staff and school staff. For this reason, on the basis of WE-STAY results and in the absence of a significant augmentation potential, it is not recommended to combine awareness increasing interventions and screening interventions on the same subjects. The same effects in terms of both, truancy reduction and mental health improvement, were obtained by the awareness intervention alone.

1.4. Mechanistic intervention and control of truancy (TRUANCY-MIC)

Mechanistic control of Truancy was performed in WE-STAY in most cases through systems that were already in place at the schools. When there was no system already in place, absences of all students were monitored by the WE-STAY personnel and were reported to the pupils and/or their families when TRUANCY exceeded a certain threshold. Mechanistic control of truancy was found to be effective in reducing truancy rates. When comparing this intervention with the others, it reduced truancy rates significantly less than the Awareness intervention and than the combined intervention. No difference was observed between Mechanistic control of truancy and screening. However, when analyzing the mental health outcomes of this intervention among truant students, no effects were observed on depression, well-being, suicidal ideation, emotional symptoms, hyperactivity, peer problems, prosocial behavior and coping strategies. Some improvements were observed only on conduct problems and active coping. Mechanistic control of truancy, in contrary to other interventions, had no positive effects on the mental health of truant pupils, with the exception of an obvious decrease of conduct problems (truancy itself) and a slight increase in active coping. Some coping skills were activated by forcing pupils to attend school. WE-STAY results suggest that a mental health component should always be included in intervention programs for truancy. Otherwise, even if truancy might be reduced in a mechanistic way, mental health problems, which are common among truant pupils, are not affected in any way.

1.5. Main dissemination activities

Immediately after the project's beginning, the partner responsible for the Dissemination workpackage began to organize dissemination activities. A comprehensive plan containing indications about targets, strategies and tools of dissemination has been developed and shared with the other partners.

Three different level of dissemination have been identified:

1. Scientific Community;
2. Politicians and Stakeholders;
3. General Public.

According to a shared dissemination program, each partner:

1. Provided the logo of his own organization and all references that are useful for dissemination;
2. Used the WE-STAY logo in presentations, publications and/or other activities regarding the project;
3. Contributed to the project promotion and dissemination of results;
4. Kept track of all the activities performed and shared them with the dissemination workpackage leader;
5. Produced a final report on the dissemination activities carried out.

All partners actively took part in the dissemination process, providing translations and publications, participating in conferences and workshop, etc. The responsible of the dissemination workpackage created a standardized document to collect all the relevant information concerning the dissemination activities performed by each centre at local, national and international level. At each site, a responsible for dissemination has been identified and the document has been shared with him/her. Each time a dissemination activity took place, the local responsible for dissemination updated the shared document with the required information. Records for all the activities (e.g., slides, posters, leaflets) have also been collected.

The WE-STAY logo and a slide containing main information on the project have been designed, so conferring a unique graphical identity to all the dissemination activities. The WE-STAY logo and the slide have been developed in order to enhance the European nature of the project, also underling its funding by the EU as a cooperative action under the 7th Framework Programme.

The WE-STAY website (see <http://www.WE-STAY.eu> online) has been created and then translated into all the languages used in the project (Deliverables 2.1 and 5.5). Two different parts have been developed inside the website, one public and one private. The private part is used as place of exchange of key information and materials between partners.

The public part contains six sections:

1. Homepage. It includes a brief summary of the project and its objectives.
2. Objectives. This section contains a more specific description of the project's objectives.
3. Consortium. The complete list of partners is showed here.
4. Workpackages. The 17 project workpackages are presented with the name of the leading centre.
5. Dissemination. This section contains a description of the plan for dissemination.
6. Contact. Project Coordinator and Project Manager contacts are available here.

A uniform text containing a general description of WE-STAY has been developed and then translated in all the relevant languages to be used as multi-language dissemination material (Deliverable 5.6).

Within its Seventh Framework Programme (FP7) HEALTH programme, the European Commission has funded a special project called CommHERE, Communicating European Health Research. The aim of CommHERE is to improve communication on the outcome of EU funded health research projects to the general public and the media. WE-STAY interacted with CommHERE in order to improve its dissemination strategies. A WE-STAY dedicated page has been published on HorizonHealth.eu webportal, a CommHERE initiative (see <http://www.horizonhealth.eu/project/working-europe-stop-truancy-among-youth/153> online).

Dissemination to the general public has been performed in this project and all sites worked hard at local and national level to promote WE-STAY and spread the following messages:

- Truancy in adolescents is a warning sign of psychological distress;
- Truancy is preventable but prevention needs an accurate analysis of associated psychological factors;
- Truancy prevention programs can be considered means for promoting mental health in adolescents
- Mental health is a key determinant of general health.

Beside the project website, TVs, radios, newspapers and press releases have been used for this aim. Furthermore, conferences, workshops and print materials (e.g., brochures, leaflets) represented the main tools to communicate these messages particularly to parents, students, teachers and school staffs.

Raising the awareness about mental health produces an increase in the demand for help, so healthcare professional and the broader scientific community represented one of the main target audience of WE-STAY dissemination activities. Methods and results of the WE-STAY project have been published in local and national reports as well as presented in conferences and workshops. Wherever possible, master or doctoral level educational programmes (e.g., public health, mental health, social work) in participating countries included descriptions of the WE-STAY project. The section of adolescent mental health, already created by within the EPA (European Psychiatric Association), by partners in the WE-STAY consortium has been involved in WE-STAY activities to increase the visibility of the dissemination plan. A plan for scientific publications has been prepared and will allow for the exploitation of the foreground of the WE-STAY results also after the end of the project. Several publications are currently in preparation and will be submitted shortly to scientific journals.

List of websites:

<http://www.we-stay.eu>