United Nations Population Fund
Almaty
Kazakhstan

Toward a detailed study of suicide prevalence among adolescents in Kazakhstan

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June 2013

Background

Rate of suicide among young people specially adolescents 15 to 19 is a concern in Kz; it seems that the rate was high compared to neighbour as well to European countries mainly for young girls and is increasing.

Experts have been brought in to tackle the problem: Unicef asks Robin Haarr an expert on violence against women and children to make a report. This report summarised the major findings on suicide and tried to describe the situation for the young in KZ however by doing so her conclusions was “Overall the data provides us with little insight into the true extent of the problem od child suicide because the data is inconsistent and conflicting. Data problems relate to issues of reporting, registration, and data collection practices at the regional and national levels. In particular age and gender are typically not recorded in suicide and suicidal attempts”

Another expert Marco Sarchiapone from Molise University was bought in to set up programs to prevent suicide who conducted a study called psychological autopsies , a school survey in a high suicide region plus sat up an observatory for suicidal attempts.

A recent congress(May 2013) in Astana allows to present data on this work and on suicide prevention programs.

As a psychiatrist and epidemiologist I have been appointed for a 6 days mission to propose” a detailed study design of suicide prevalence among adolescents in Kz”

Methodology

This report has been made after several visits and discussions; however most of it has been translated, thanks to Yuliya Lyssenkova, but I may have misunderstood some aspects and my report may not well transfer what has been said so if anything is wrongly interpreted I will be happy to amend the report.

-talk to Alexander Kossukhin Sub-Regional office UNFPA for Central Asia

-3 Visits to Sergei Sklyar, child psychiatrist in National Center for Psychiatry, Psychotherapy and Narcology which kindly provided data (suicide and psychiatric activity reports), ppt from astana meeting and questionnaires used for the "psychological autopsies" and for the survey plus data on the child psychiatric system and many other useful information

-visit to Director of Almaty Center for Forensic medicine legal with detailed information on death certificate and report form including visit to the anatomopathologist expert

-calls to Aigul Kadirova Programme Officer Young People's Health and Development, HIV Prevention unicef which provides additional information on survey , plus other documents on suicide.

-Medline research on youth suicide and suicidal behavior, risk factors and preventive programs focusing mainly on top journals and recent reviews.

General considerations

Suicide is very complex ; the Robin Harr report summarised the multifactorial aspects: genetic, biological, environmental , cultural and social . Suicide rates are very different across European countries with range as large as 10 fold differences. Within the same country , regional differences could also be very important as it is the case in Slovenia bordered East by Hungary where rate is very high and West by Italy one of the lowest rate in Europe and where rates are increasing from West to East (Marusic 2001)(1) .

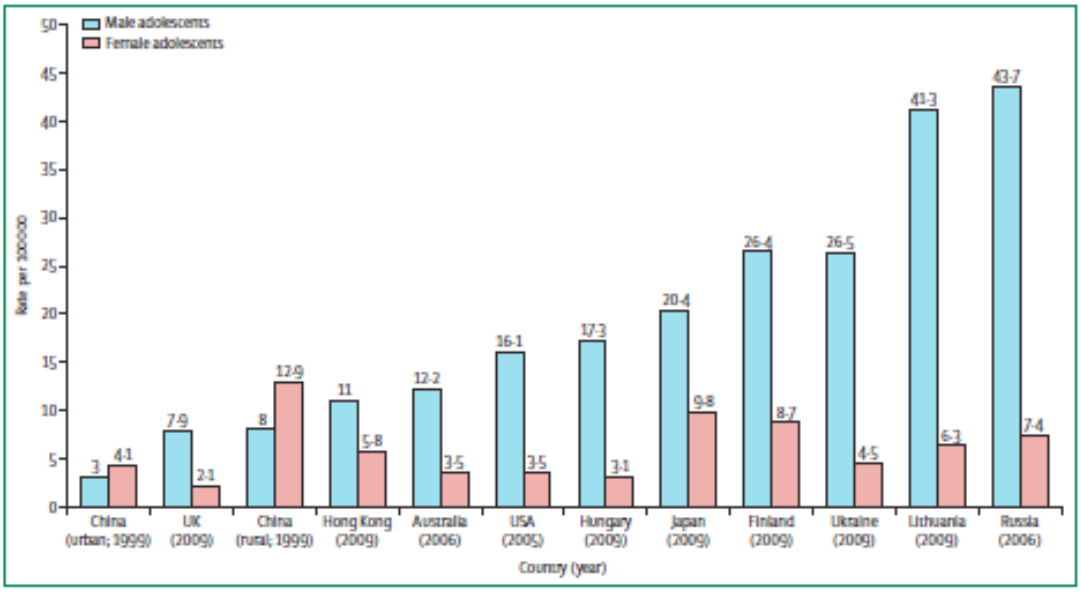


Figure 3: Suicide rates in individuals aged 15–24 years in selected countries

Suicide should not be oversimplified and although a lot of efforts have been deployed to fight suicide, these programs have not been really probed to decrease suicide. Moreover three reviews Gould (2003), Mann (2005) and more recently Robinson (2013) (2-4)concluded that evidence is lacking or very limited on suicide prevention on youth people. This does not mean nothing could be done: primary physician education , access to anti depressant in case of severe depressive disorder, restriction of lethal methods have been recommended; for the youth , school based training for students, screening for at risk young, media education, avoiding that internet and new communication instruments will serve suicide and trying to use them to prevention have been proposed and used but it should be kept in mind that all these reviews concluded that they may be promising interventions but that we are lacking evidence on this truly decreasing suicide rates.

In addition papers have been published to evaluate the iatrogenic effects on screening depression and suicide on adolescent because some researchers warned that this may in fact, increase their suicidal attempts instead of decreasing them since adolescence is a complex period where dangerous and forbidden acts may appear interesting and ways to bring attention. Actually one report Gould (2005(2)concludes that there is no evidence that screening on high school was damaging in a RCT in NY (USA) but this was done on a specific context following a postvention intervention and has not be repeated. Moreover what is done in schools in New York may not so well be transferred to such a different society as KZ where cultural relationships to mental symptoms and access to care for mental health disorders are rather different and highly stigmatised so any transfer of such programs should be made with a lot of caution and carefully evaluated.

Why it is so difficult to establish efficacy on suicide reduction ? There is a lot of confusion between suicide , suicidal attempts and suicidal thoughts. (Jenkins, Kovess) (5) What is working on suicidal thoughts, may not work on suicidal attempts and what works on suicidal attempts may not work at all on suicide. Of course people who commit suicidal attempt are at risk for completed suicide and people who has suicidal thoughts have more risks for suicide but the respective frequencies of these phenomena are very different , their risks factors are not totally identical and they are not found in the same populations.

Suicide is a rare phenomena in youth people: prevalence is 20/100 000 in KZ for the 15 to 19 years old so they are around 200 cases for the all country ranging for a given year from 0 in some “oblast” to 44 in other one. Such small numbers will vary from year to year and to judge their trends we need to pull a three to five year period so it will take time to judge. If any trend shows up, it could be explained by many external factors: a better access to emergency care in case of suicidal attempts will decrease the rate among many other factors. To set up control trial is then very hard since it requires large population size for such a rare phenomena , randomisation which ensures that what is done on one part of the young population is not done on the other part in a time people move and have access to a lot of information trough internet.

Risk factors for completed suicide are mainly severe mental health disorders: for adolescents , psychotic symptoms are associated with 10 fold increase odds of any suicidal behaviour; depressive adolescents with psychotic disorders have 14 fold increase of plans and attempts and adolescents with suicidal thoughts and psychotic symptoms have 20 folds higher risks of suicide plans and attempts that those who do

not have such symptoms (Kelleher 2012)(6). The author concludes that assessment of psychotic symptoms is a key part of suicide risk assessment. Other authors (Merikangas 2012)(7) have bought up the recent increase of mania among adolescents in the USA with rate of 2,5% for bipolar and 1,7% for mania only in this population; disorders who multiply by 5 the risk of suicide. Substances and alcohol abuse and dependence are also closely linked to suicidal behaviour in children and adolescents (Wu 2004)(8).

Psychological autopsies are the method used to reconstitute the pre-existing mental disorders in completed suicide. An extensive review (Cavanagh 2003)(9) identified 154 papers using the method but have to exclude 79 of them because they did not correspond to the required method which implicates direct interviews with informants by people specially trained for this technic, using clinical diagnostic instruments on a three months to one year period after the suicide. The review concludes that 91% of the cases were suffering from a mental health disorder in the cases series and that sociological variables were not sufficiently studied to draw conclusions so suicide prevention strategies should focus on treatment of mental disorders.

A recent review on suicide (Hawton 2009) (10)came to the same conclusions however it bought up the issue that most of this autopsies have been done in developed countries and quoted two papers one from India which shows identical results and one from China which shows no mental health disorders for girls committing suicide in rural areas as for middle age women.

Mental health disorders present are : major depressive disorders specially bipolar disorders (10 to 15% of them died by suicide early in the disease course), schizophrenia mainly at onset and alcohol misuse alone or coexisting with the later disorders. Impulsive disorders are also important: antisocial personality and borderline personality disorders and any association with alcohol or depression highly increases the probability. Impulsivity is much more present in young suicide than in older persons. Relationship between suicide and depression is less present in Asia and suicide appears to be more impulsive in developing countries than in developed countries.

These findings have some relevance for the present concern on KZ young people: impulsivity, alcohol misuse, onset of schizophrenia and severe depressive disorders with or without mania and eventually some specific situations for girls in rural areas have to be investigated.

Indeed although diverse models of suicide have integrated actual stressor this could bring some confusions.

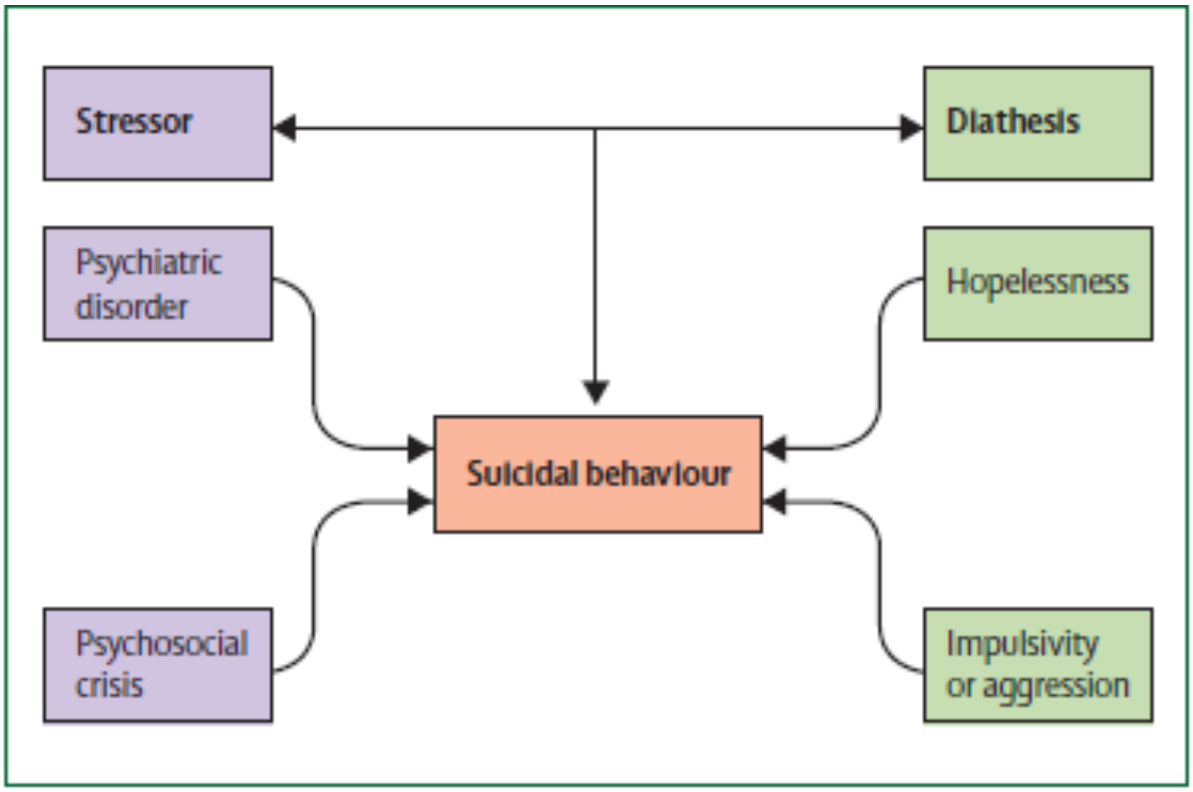


Figure 2: **A stress–diathesis model of suicide**
Adapted from Mann 2003.[31]

A lot of stressors are present in most of young people in a given society; in some westernised society half of the parents divorced, in some others sex is a taboo but usually most young people will cope with these events; the very few who commit suicide are exposed to these stressors like the other kids but in addition they are suffering from some mental health disorders which has been or not been detected. Unfortunately some psychotic disorders are concealed and are inaugurated by a suicide in the context of psychotic delusions, which could be found on the adolescent face book declaration or on other documents, or it could happen in the context of alcohol or drug abuse. Since these young people are facing hardships those hardships are often considered as the main cause but an attributable risk ratio has to be calculated to support the hypothesis which integrate the number of young people faced with the same hardship who did not commit suicide ; those who commit suicide and do not face the hardship and those who are neither suicidal nor facing the same hardship. Same rules apply to other suicidal behaviours and actually what seems to operate is a hardship happening to somebody who is suffering from pre-existent severe mental disorders, detected or not detected nor treated precipitating the suicidal issue.

Adolescence is a difficult period,: sad mood periods, strange behaviours, attraction to dangerous situations are the norm not the exception and mostly of these rapidly fluctuate rendering the detection of adolescents suffering from risks for suicide quite difficult to operate . To bring attention to any young with suicidal thoughts is not possible for example in France in the 15-19 years: 11,4% of girls and 5,9% of boys reported suicidal thoughts in the past twelve months (Kovess 2008(11)which is some what higher than in some other European countries, so it will use a lot of resource to follow them provided they and their family agreed, and this is potentially harmful by

stigmatising these young, medicalising sadness and attracting into the psychiatric system mild and transient psychological difficulties. Same French survey (Kovess 2008) (11)shows an important decrease of suicidal thoughts in the subsequent years : 5,5% for total population in the 20 to 24 years and in the 25-29.

Detection if any should then rely on instruments and methods which assures good specificity that is do not detect too many false positive (cases detected who are not cases) as sensibility (cases detected among the true cases) together with reliability since most of these feelings are transient . In addition it should not be forget that the most at risk adolescent are those in institutions (juvenile prisons, orphanages or special institution for behaviour disordered children) which usually are not considered in the detection programs.

Suicide clusters in young people have been also a topic of attention since although very rare it causes great concern ; a recent review (Haw 2013) (12)underlines the lack of rigorous studies on the topic.

Suicidal attempts epidemiology seems easier to set up than suicide because the phenomena is more frequent and people could be interviewed in person : 10% of adolescents are reporting self harm whether or not with suicidal intention in community surveys with some international variations. Self harm is considered as a risk factors for suicide even so intention is not present.

In the WMH survey consortium Nock (2008) (13)reporting on 17 countries among them Ukraine, concluded that « The estimated lifetime prevalence of suicidal ideation, plan and attempt in the overall cross-national sample is 9.2% , 3.1% and 2.7% , respectively . Among suicide ideators, the conditional probability of ever making a suicide plan is 33.6% and of ever making a suicide attempt is 29.0% . The probability of attempt among ideators with a plan is 56.0% but only 15.4% among those without a plan . Within-country prevalence estimates show substantial variability, with the cross-national estimate outside the 95% CI in 13 of the 17 countries for suicidal ideation, and 12 of the 17 for suicide plans and attempts. Prevalence estimates in low- and middle-income countries are similar to those in high-income countries for: suicidal ideation (3.1–12.4% **v**. 3.0–15.9% respectively), suicide plan (0.9–4.1% **v**. 0.7–5.6% respectively) and suicide attempt (0.7–4.7% **v**. 0.5–5.0% respectively). Although prevalence estimates varied cross-nationally, the conditional probability of suicide plan and attempt among ideators is more consistent across countries, with the cross-national estimate outside the 95% CI in only 5 of the 17 countries for plans, 7 of 17 countries for attempts, 9 of 17 countries for unplanned attempts, and 4 of 17 countries for planned attempts.

Consistent cross-national risk factors included being female, younger, less educated, unmarried and having a mental disorder. Interestingly, the strongest diagnostic risk factors were mood disorders in high-income countries but impulse control disorders in low- and middle-income countries.

Suicidal attempts are barely evaluated from hospital records because access to hospitals mainly depends on local policies, availability of beds, seriousness of injury or poisoning, extensiveness of hospital cases records to mention few of the factors that will render the statistic of little value. However some trends could be drown from hospitalisation data for example in France (Chan Chee 2012)(14) there is a clear predominance of women with an important peak for the 15 to 19 women : 43 /10 000 versus 15/10 000 for men

same age and a second at 45 year (31/10 000) in contrast to the suicide distribution which shows men higher than women and usually higher rate in aged men although in some countries like KZ a peak appears at 25-34 and then a second higher peak is still present for aged men (see below table).

Although there is no doubt that suicidal thought and attempts are risks for suicide, the data illustrated that to decrease suicide rates strategies have to focus on a larger field than these suicidal behaviour or any depressive symptoms : psychotic traits, early bipolar disorders with a family history of suicide, substances abuse and dependency and impulsivity are important risk factors and should be at the first line for detection.

However detection is useless if care is not available and this is another topic of concern in Kz. According to our data they are 5 psychiatrists for 100 000 inhabitant a rate which is half of what he is in the most developed European countries but same as UK. As in any countries those psychiatrists are not uniformly distributed : in East Kz they are 8/100 000 but 1 in the Almaty region but this could be that people are easily getting to Almaty .

Actually psychiatrists, according to what we understand, did not have access to the scientific worldwide literature: they do not speak English or at least are able to easily read papers and if they were, they do not have access to the reprints when summaries free for charge in pub med are not enough to understand and use its content; they do not have sufficient initial training : in most of the countries psychiatric training lasts four years and could be five for child and adolescents psychiatrists when in Kz it is one year only . This is being changed to two years, which is an improvement, but then continuing education becomes a must and should be organised one way or another. In addition we did not hear about child or adolescents psychiatrists having training for conducting research on the fields; they have no training in clinical research nor in epidemiological research and no contact with leading teams in the field except brief contacts with "experts" which does not allow adequate training. Solutions exist such as masters delivered on line with little on site attendance or masters delivered in one year in many high standard universities in the US or in Europe. Psychologists could also be trained in psychiatric research , public health and epidemiology research the same way so at least one significant group of persons could work together with statisticians, sociologists, ethnologists and demographists, in order to develop their own research themes supported by their former teachers and their university networks. This means a good knowledge of English plus habit to work together across disciplines and administrations which is breaking the actual way to work which is highly compartmented; this also requires an open state of mind which could put into questions some statements that has been established for long time and supported by hierarchy which is omnipresent and feared.

Development of research and true links with state of art high standard research in the fields is very important to attract the best people in the country, young and not so young, in order to develop adequate local KZ research and criticism on what is proposed from outside. It will ensure quality of care and quality of teaching, which set up the bases for quality of care for the young patients and increase skills to better organise the mental health resource, which should be attractive for young people who usually are not keen to consult . In addition this should be adapted to new technologies; many countries with large territories such as Finland or Canada have developed tools to reach people by

internet and provide adequate support for those suffering from mental problems but again this will require adequate training for those in charge of the e support.

Psychotherapists are remarkably few : 0,5/100 000 by comparison they are 3 to 30/100 000 in the western European countries. We do not have data on Psychologists; we do not have information on school psychologists their training, their role , their relationship with local psychiatrists but it seems ,from what we hear, that there is an immense need to train psychologist to diverse therapies and revise their curriculum and exposition to clinical cases. Supervision seems also inexistent for therapists as for psychiatrists.

General practitioners are never mentioned when they are the key persons in most of the preventive programs however we understood that in polyclinic kids have their "therapists" which is free for charge and close to them; them at adolescence they are shifted to another therapist which stops to follow them once adults (18 years old) this needs to be questioned since the training on mental health disorders recognition of these doctors whose adolescents know and trust maybe a great help if they could continue to follow the kids until 20.

In our opinion the way the health system is functioning for mental health problems is a topic of concern in KZ if one wants to fight suicide; since most ,not to say each young, suicide is ultimately supported by an underline mental health disorder, the organisation of care for treating those mental heath disorders is a key element of the disposal.

Toward accurate suicide data on young suicides in KZ

Accurate data on youth suicide are difficult to obtain for many reasons : suicide in adolescence might be substantially under recorded by authorities with possible suicides often being given undetermined or accidental verdicts (Valle, Gosney 2008)(15) . Such under-reporting may be done to protect families from the perceived stigma of suicide. Moreover often nationally statistics are reported in global range such as 10-24 years so adolescent did not appear clearly since the bulk of suicide appears at 17 or 18 years so in the 10 to 19 intervals, inclusion versus exclusion of the 18 and 19 years could radically change the prevalence.

State of data collection and exploitation

In KZ data concerning violent deaths are subject to autopsies ; in each "oblast" forensic medical doctors are conducting autopsies and provide a written detailed report including alcohol and drug dosage and pregnancy if any.

They complete the death certificate which contains some information on ethnicity, marital statute, education, place of work , global category for causes of death and ICD10 categories whenever pertinent plus information on the person who wrote it.

However in case of potential suicide, this is the police authorities who will make the final judgment. The physician who is conducting autopsy will have some report from the police when called to investigate the death but unless this report is mentioning "suicide" this will not be recorded because they are not entitled to make such a judgment.

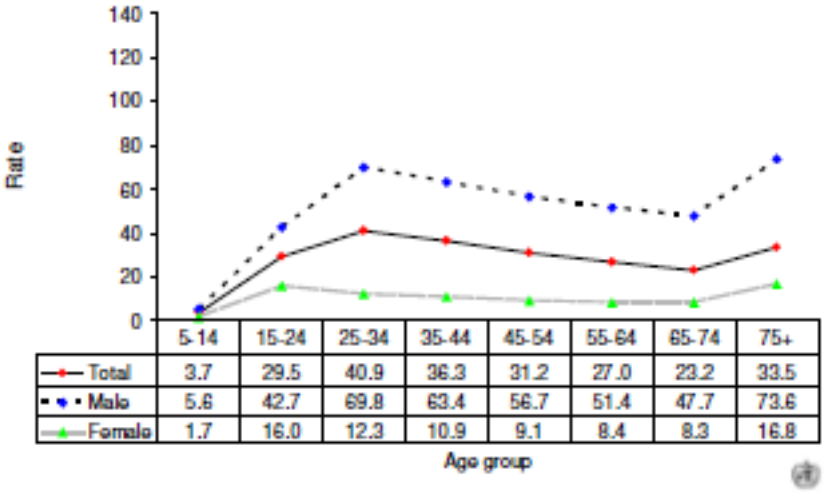
The final suicide diagnosis will be made by the police and centralised to "procurator" which produces his own suicide statistics but there is no contact between the statistic agency and the procurator statistics. This has been pointed out as a problem and some efforts are done to "reconciliate" the data and produce more accurate statistics but actually what is available is a report for 2010 and 2011 on number of suicide for minor (0 to 18 excluding the 18 years old) totalling gender and age classes.

In the meanwhile each forensic "oblast" centre is sending a detailed yearly report on any causes of violent death as well as other causes with special attention to some age categories (children 1 to 15); this report is made of compilation of death certificate once autopsy has been conducted. It is worth noting that the death certificates although pre coded are not entered into computers so the report is done by manual compilation of each certificate and this does not allow statistical treatment by age, gender , causes and other information.

However some sort of computerisation should exist since I got excel files (number and prevalence) by "oblast" in number and prevalence for 7-9, 10-14, 15-19, 20-24 and 25-29 total and by gender for the year 2009 to 2011

Possible exploitations

Suicide rates (per 100,000), by gender and age, Kazakhstan, 2008.



	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+
Total	3.7	29.5	40.9	36.3	31.2	27.0	23.2	33.5
Male	5.6	42.7	69.8	63.4	56.7	51.4	47.7	73.6
Female	1.7	16.0	12.3	10.9	9.1	8.4	8.3	16.8

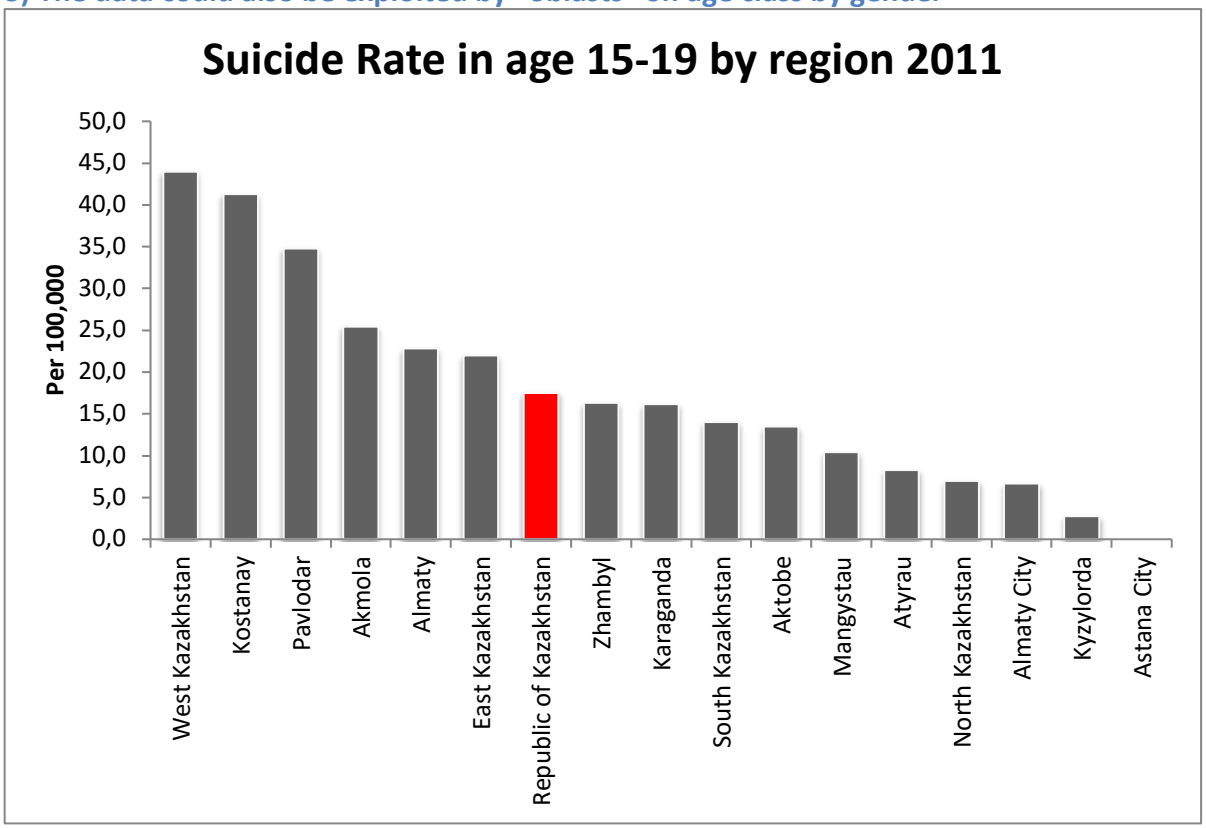
1) Suicide by gender and age by five year intervals

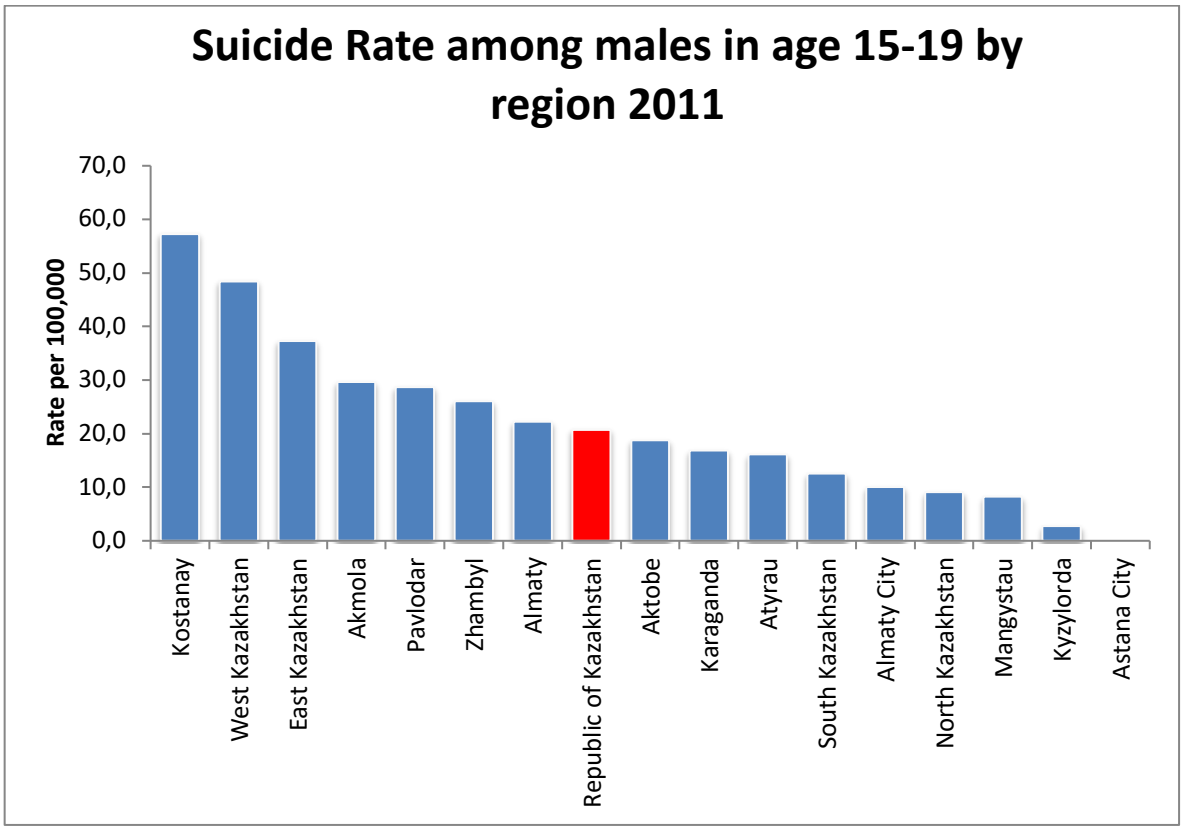
The above is showing the suicide Kz trend with two peaks on at 25-35 and one over 75; the 15-24 is intermediate. This came from 2008 WHO data but has to be built on more recent data and more refined age classes such as 15 to 19 and 20 to 24 or 0-18 for children . However it is important to consider the complete age distribution to describe the young suicide since it has to be contrasted with the no young to be understood.

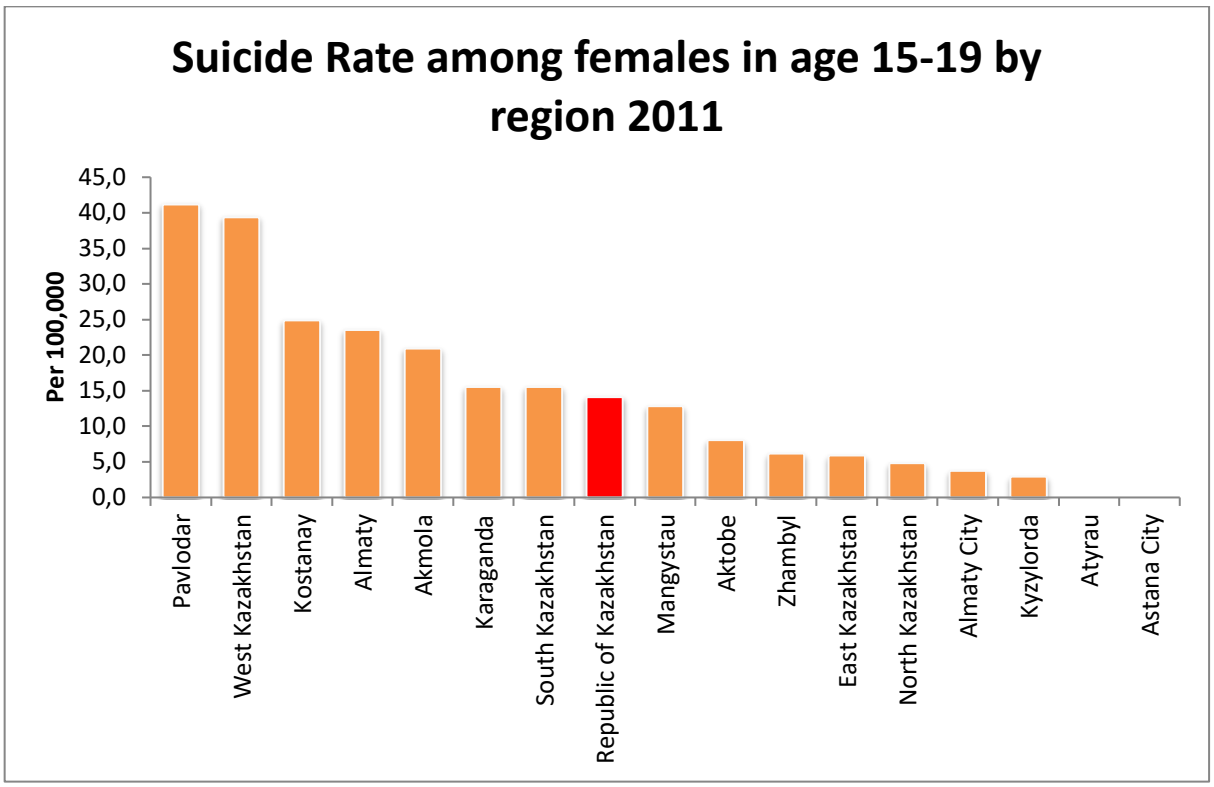
2) trends over time on age classes by gender

When the young class is selected only, suicide seems to decrease for young males and to stay stable for young women however the number are relatively small : 244 for the year 2011 for this age class so trends should be observed on many years . Of course this could be done the same way for 10-14 and 20-24 since the data are available. Ideally this should be done as a curve by age in year for each gender ;

3) The data could also be exploited by "oblasts" on age class by gender




Suicide Rate among males in age 15-19 by region 2011
Rate per 100,000
70,0
60,0
50,0
40,0
30,0
20,0
10,0
0,0
Kostanay
West Kazakhstan
East Kazakhstan
Akmola
Pavlodar
Zhambyl
Almaty
Republic of Kazakhstan
Aktobe
Karaganda
Atyrau
South Kazakhstan
Almaty City
North Kazakhstan
Mangystau
Kyzylorda
Astana City


Suicide Rate among females in age 15-19 by region 2011
Per 100,000
45,0
40,0
35,0
30,0
25,0
20,0
15,0
10,0
5,0
0,0
Pavlodar
West Kazakhstan
Kostanay
Almaty
Akmola
Karaganda
South Kazakhstan
Republic of Kazakhstan
Mangystau
Aktobe
Zhambyl
East Kazakhstan
North Kazakhstan
Almaty City
Kyzylorda
Atyrau
Astana City

As one can see there are huge differences between region ranging from 44/100 000 to 0

However in each oblast, numbers are rather low around 20 on average with few exceptions at 36 or 37 so any case will make a difference; curiously there is no case in Astana. The fact that oblasts suicide rates differ is not a concern; Kz is made of quite diverse ethnicities and oblasts correspond to diverse percentage of these ethnicities. Northern territories may be more Russian population with higher rates of suicide and Southern more KZ population , more traditional , mainly muslim with lower rates of suicide and this will constitute an interesting field of observation and understanding of young suicide in the diverse contexts.

However, to be able to draw such conclusions data should be collected the same way in each oblast and what we have learned on data collection do not warrant it . The differences could be due to diverse attitudes from the police authorities which in some oblast may be more prone to enter the term "suicide" in the records they provide to the forensic doctor enabling him to enter it into the death certificated when they will be less so in other oblasts

When contrasted with the data from general procurator , data are difficult to compare since on one hand we have the "minor" under 18 and the other hand you have 7 to 19 which are the closest but contains 18 and 19 years old where the highest suicide rate is present : for 2011 procurator gives 257 and statistical department 308 so we have 51 cases more which correspond probably to 18 and 19 ages. Since in 2011 we had 5.111.900 children under 18 the in KZ rate is 5/100 000 for children versus 5.95/100 000 once 18 and 19 old young have been added to the denominator for the data coming from the statistical department on a slightly different age range. This does not mean we are talking about the same persons and the procurator data we got did not split gender nor age classes .

To conclude although we understand the need to have a police officer to participate to the final diagnostic of suicide, there is a need for integration of this expertise into the forensic data in order to obtain an unique et reliable source of data

4) follow up of young violent deaths from annual reports by adding columns for youth both genders and/ or by computerising death certificates

We recommend ,if this is not the case, that the certificates of death will be computerised to allow to sort out the data by gender, and age classes or year by year if needed . Exploitations will then allow to compare the different causes of violent deaths at different age and for both gender such a hanging, drowning, falling , poisoning, over dose in a very efficient way. When comparing the price of a few computers with very basic software such excel to that one of the people entering manually the data to produce annual tables that are rigid by definition , the gain seem worth doing without mentioning the errors that manual account is causing. However they should be already some computerisation at the statistics office level but we do not know how requests are functioning and how much they are flexible for age and gender divisions for example.

Another concern when monitoring suicide is the shift from one category to another; as we said suicide is a difficult event and very much stigmatised specially for so young people ; in addition if a policy is made up to decrease its rate, people may favour other causes such falling or accident or unknown cause to protect families or for other motives so it is very important to monitor all causes of death for young people specially the

categories which may have been suicide and which are well classified in the annual autopsies reports from each oblast forensic units

However this is not possible actually since the annual report only sort out death causes for children 0 to 15 so if additional columns could be added with 15 to 19 and 20 to 24 for male and female it will be possible to monitor the diverse causes of death of young people. Since any violent or suspect death will receive autopsy , it will reflect at least the diverse causes of death for young , which some of them are very probable suicide such as hanging or poisoning ; this will also allow to monitor over dose, accidental falls , unknown causes and car accidents in parallel to the monitoring of suicide from diverse sources as in the following figure.

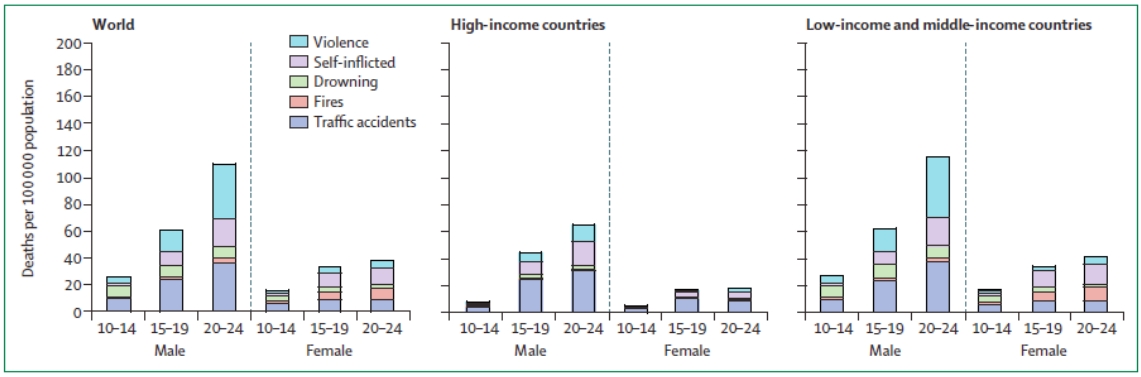


Figure 1: **Causes of death by injury, by sex, age-group, and region**
Adapted with permission from Patton and colleagues.[8] Violence refers to deaths from violence in and outside of war.

5) the role of pregnancy and marriage in young female suicide

This could be done by analysing the death certificates of young women: from 2009 to 2011 they have been respectively 214, 193 and 172 suicide in women 15 to 24 year old.

The death certificate mentions the pregnancy ; since the probability to be pregnant in the general kz female population same age is known, it is then possible to compare the expected probability of pregnancy of those deceased by suicide with that one of a age comparable population; the same rate could be calculate for the other causes of external death such a car or vehicle accident. Deaths for medical conditions are not adequate since a lethal disease could prevent the women to be pregnant by lowering her chance to have a partner and her capacity to bare a child. These comparisons could be made by ethnicity to check if to be pregnant is one ethnicity increased the risk of suicide, or by rural/urban areas.

Same applies to marital statute; by knowing the rate of married women at each age the rate could be compared to that on of those committing suicide. Marriage is supposed to be protective against suicide but this may shows that this is not the case and the rates could be done oblast by oblast or by ethnicity and rural/urban locations.

6) the role of alcohol or substance in suicide

Death certificate mentions presence of alcohol and drug so diverse causes of death in young could be compared with the expected prevalence of alcohol problems in comparable population by age and gender if such data exists . This may be done from the data collected during the recent regional survey, which contains question on alcohol and

drug usage or from subsequent surveys. Presence of drug and alcohol in suicide and other violent causes of death such as accident with and without vehicle could be monitored such as over dose or ethylic lethal intoxication mainly in males population where the risk is the greatest. Again the ethnicity could be studied and rural/urban location since they may have an effect on alcohol consumption and risk of suicide in this context.

7) the role of ethnicity

Death certificates registered ethnicity so rates by gender , age classes and ethnicity could be produced if the issue is not too sensitive. We know that 63% of the total population is KZ, 24% Russian, 2,9% Uzbek , 2.1% Ukrainian and 1.4 Uighur % ; these % have to be checked for young people then the percentage of suicide could be compared to see any difference for women and for men. This could be very informative on helping to understand what in a given culture is preventing or on the contrary precipitating suicide. This could be due to rules that put adolescents in dramatic situation without forgetting that genetic is also an important component of these differences as access to care and stigmatisation of the mental heath problems in different cultures.

Measuring Suicidal attempts

From what we have observed there is actually no way to gather acute information on suicidal attempts prevalence from any sources in KZ

General procurator is providing some figures for 2011: 592 for those below 18 by oblast however we do not have gender nor age and we do not have the children population in the diverse oblast to calculate rates at this level but this will certainly be available . For the KZ the rate is 11,6 /100 000 for under 18 . At first glance the suicidal attempts prevalence do not parallel the suicide prevalence and the huge difference between oblast: on oblast report 148 cases so a third of the cases with a low suicide number (13) ; another reports 85 suicidal attempts (59 completed suicides)

The observation of the regional data specially their diversity makes me recommending to uniformed their collection so we could rely on it in the future but not to use them as they are. Actually we do not know what makes a suicidal attempt recorded by the procurator ; it seems that when young attempt a life-threatening attempt or considered as such by the people around they will call an ambulance and /or the police and the police will be able to record it but this does not mean that any attempt will be recorded. Some who fail to kill themselves will never talk about it or declared that it was accidental, some may call the police and declare that it was an accident or some may stay totally ignored by the police without mentioning the families who try to avoid that this will be considered as a suicidal attempt because of stigma and the ability to the police to send somebody if they were busy at that time.

This does not mean that studying those reported attempts is useless they are cases and this will be important to follow and eventually treat them and to learn from them since they are an at risk group.

Another question is the feasibility of using key informants to get data on suicidal attempts. Police could be key informants since they are the one to be called when something happened however the procurator data analyses rendered this solution unsafe at least at the present because of too much local variations; then hospitals will

not have comprehensive data on the suicidal attempts since many of them did not reach hospitals and doctors in polyclinics do not gather that sort of data nor the psychiatrists which probably see few of them . Any way this data will not be uniformly collected and comprehensive enough to provide reliable information. The teachers and school people may not be aware of suicidal attempts on the reverse parents may try to conceal so we do not recommend working with key informants for getting sound data on suicidal attempts although all these people have to be contacted when studying the phenomena for qualitative work.

In addition to the procurator data on suicidal attempts by children (0 to 18) another rate could be produced from the preliminary analyses of a 2970 sample of young people 16 years on average, from west kz a region where the rate of suicide is the highest: to a question on having tried to end its life in the last 2 weeks 1,5% of the young say yes . Contrary to what is expected according to the literature , as many girls than boys say yes. Such an unique preliminary result is hard to interpret ; rates are usually express by year so the equivalence between 2 weeks and one year is hazardous; we do not know how the sample was drawn , the weighting system for taking in account the school size difference if any nor the school and children participation rate nor the way non answering to this specific question has been treated . We do not know if some kids have been selected in schools or if each kids in the school have been interviewed with produce a cluster effect nor we know how it was administered by interviewers and what sort of interviewers was used and what sort of training did they got if any; all these could have influence on the rate.

Since additional questions were asked on the way these young people attempted to their life (they have to write the answer so this has to be recoded) and to whom they have been addressed, it will be easier to judge the validity of the answers and to understand the absence of gender difference. In the mean time each indicators that was used in this survey have been scored negatively for those who gave a positive answer . However once definite results will be published this will produce a regional evaluation of suicidal attempts but could not be extended to KZ since the area has been selected because of high youth suicide rates so further surveys have to be done if one want to describe suicidal attempts in the KZ republic.

Measuring Suicidal attempts and suicidal thoughts in general population surveys on adolescents

Indeed population surveys where young are randomised and asked to declare their suicidal attempts and self harm behaviours together with socio demographic, clinical and other contextual data including their access to care will provide useful information and allow to monitor the phenomena and to set up preventive measures. Moreover it will bring in national and regional data and allows meaningful comparisons.

Ways to ask for suicidal thoughts, plans, attempts lifetime and one year periods are relatively standardised and many surveys have been done using these questions, however they are many diverse options to design surveys.

-1) they are surveys designed to gather epidemiological data for increasing general knowledge , comparing risk factors and areas, access to care and attitudes toward mental health problems and monitoring actions and surveys design to detect young at risk in person and interview them in depth to offer them to be treated if needed.

Both makes sense and have advantages and disadvantages: in surveys without personal detection there is not need to organise a system for follow up . This option could be recommended when a topic is very much stigmatised, a lot has to be learned on the risk factors and access to care then the survey will prepare actions to be well adapted to the target population but people will get the impression that nothing is done to help these young people. Surveys with detection will require to do something about the one which is detected and to have instruments that are sufficiently specific so the bulk of the detected are not "no cases" . Indeed when a lot of false positive are detected this becomes an inconvenient by using a lot of resource who may be much more useful for treating those suffering from mental disorders who are the at risk persons that to evaluate the many mild depressive or transient sad young people passing trough a bad period that are not cases, which is what is happening in this situation.

Of course this does not apply to the young who declared having attempted suicide which are certainly at risk and much less prevalent. However if one wants to follow adequately these young people , they are many steps to take: the young and his parents should accept the help without being obliged and felt stigmatised , professionals who do the follow up should be very competent since these young people are very fragile ; inadequate interventions may precipitate instead of preventing the acting out plus all this should respect anonymity all conditions that seem not warranted in the present situation. So general information on teachers and school psychologists on what to do for a young people which spontaneously talk about suicide attempt may be safer than systematic detection in the actual context of the mental health care system.

- 2) one shot versus longitudinal

When deciding to conduct surveys, the possibility to follow the same persons over time will allow to clarify risk factors. If risk is measured at the same time than the problem , they are "correlates" not true risks factors. To evaluate risk factors we need to measure and follow mental heath and to monitor events and explore how events precipitate or not the disorders. Those studies are rare because they necessitated a lot of resource and organisation to be able to follow the same people who may move. Of course longitudinal surveys do not need to follow young people each year they are done at regular intervals: three, five years for example. Ideally they follow young people until adulthood. Interestingly they rare surveys that has been following young at risks show that most of the more at risk kids were doing much well as adults as people predicted.

-3) informants: young alone or parents and teachers

Young could be the only informants or the survey could be organised in such a way that the young's parents will be given a questionnaire as the teachers

This will allow to gather a lot of other information on family mental health disorders ,a very important risk factor for suicide, that the young may ignore and on parental /young relationship and to gather the parents vision of their young. Parents may report

symptoms that the young is not aware or able to report plus some life events that happened when he was too young to remind to mention the few. Their stigmatisation and literacy on mental health disorders will also be important to record as well as their acceptance for treatment for their young is needed. Teachers may be other interesting informants on school achievements and failure and some behavious that parents do not report

Comparing these information will be very useful to better describe the situation and to plan more adequate actions in addition this could sensitize parents and teachers to the young mental health disorders and be pedagogic.

4) sampling design

Surveys could be done by randomising schools then by randomising kids in schools which is very costly effective since many young could be interviewed in a short period of time and eventually questionnaires could be given to their teachers and to their parents and sent back to the research team or survey could be done in the general population by phone looking for those who have adolescents which is very costly.

In addition if schools have to be randomised , attention should be brought to the school size in order to weight for it (an adolescent coming from a small school has more chance to be randomised that the one coming from a large school so this is not correct and should be corrected by an appropriate "weight"). Plus institutions where the most at risk kids are living, should not be left over but on the contrary brought in and those kids weighted accordingly

Then people should decide if they want to represent each oblast, some rural /urban only, ethnicity areas and so on according to their needs .

5) instruments selected

Alongside the suicide questions (thought, plan , attempt, seriousness of the attempt) mental disorders should be evaluated

They are two types of instruments:

A) Standardised Diagnostic instruments are describing symptoms which are regrouped by computer to reconstitute the diagnostic rules and to produce diagnostics (ICD10 or DSMV). These instruments could refer on different period: lifetime and /or last year or last month

- the Composite International Diagnostic Instrument (CIDI) has been designed by WHO and translated into many languages. CIDI has been used in adolescent surveys , it comprises different sections so people could select those who are the most pertinent and a screening section which allows to avoid a bulk of questions if the entry question for this diagnostic is negative. Substance use and abuse are part of the diagnostics.(16)

-Other diagnostic instruments are available specifically designed for kids and adolescents such as DAWBA (R.Goodman) ; the DAWBA (see www.dawba.com) is covering most of the relevant diagnostics, has versions for children (11 to 16), parents and teachers and gather qualitative information from the interviewees which are used

on a second time by a clinician to make the final DSMIV, DSMV or ICD10 diagnostic ; it has been translated in many languages among them Russian

-the DISC (Shaffer) (17)a structured diagnostic for parents which derives from the DIS and has been adapted for children and adolescents

- Some diagnostic instruments have to be used by trained clinicians only who in addition have to have a specific training for the instruments such as Capa (Angold) (18)or SADS so they are mainly used for research and as gold standard for the more epidemiological instruments

B) scales are list of symptoms on a usually short period of time like last week or last month ; they look for a frequency or intensity of presence of the symptoms rated as 1 to 4 for example from never to very often which enables to calculate a score with an eventual cut point which separates the probable cases from the normal but they could be used as a continuum as well.

Scales are not providing diagnostics but scores or dimensions; they have been used extensively mainly because some of them could be self rated but some required an interviewer qualified or not

- Achenbach Child Behavior Checklist (ou CBCL) is available for kids 6 to 18 for Parents and teachers and 11-18 to be self administered to the kids(19)
- Rutter scale for Parents and teachers
- Conners available for 6-18 kids (Parent and Teacher) plus 8-18(kids them selves)
- SDQ R.Goodman (20)(3-16 for parents and teachers) , kids 11 -16 years ; this scale has been translated into many languages and contains cut point and measure of impact; it has been used in KZ for the regional survey in the young form only. www.sdq.com
- Dominic interactive has a version for adolescent and provide 7 DSM diagnostics ; this is a self administered instrument functioning as a video game installed on a computer which shows pictures of adolescents in different circumstances and is very much appreciated by the kids and adolescents. (Valla Bergeron)(21)In addition they are scales, which focused on some types of symptoms such as BDI for depression, or some scales on psychotic symptoms that could be self administered or administered by interviewers, scales which measure self esteem, mastery, coping mechanism, impulsivity, risk taking to mention the few .

The choice is then very large and will depend on many factors among them the topic , the previous surveys if any for comparability and surveys in similar countries for being able to compare the KZ adolescents to others

Available translations is also a criteria of choice scales being more difficult to translate because their cultural content is more sensible than symptoms description with criteria (duration , number of symptoms, important distress and impairment) and their cut point more difficult to set up in various populations.

Access to care, mental health literacy (knowledge and attitude toward mental heath symptoms by presenting description of cases and asking opinions) may be added among other information on social background, religion, life events , mental disorders in family .

We would like to quote the surveys on adolescents that have been done on national samples

-The national UK survey whose the 2004 version is included into the bibliography(Green 2004) (22)is using SDQ on parents, teachers and kids 11 to 16 years; those who cut above a certain score are proposed the DAWBA. The survey has a section on self harm, life events and social network as access to care

-the US ado supplement survey which uses the CIDI"A" a slightly modified version of the cidi for adolescents 13 to 17 plus questionnaires given to their parents ; CIDI A has been validated with the Schedule for Affective Disorders and Schizophrenia (Kessler 2009)(23)

-the Italian survey Prisma 6 to 18 which has been done by randomising schools ; CBCL and questionnaires with social backgrounds were given to the parents ; for those above score DAWBA was given to the parents and to the adolescents by interviews.(24)

Recommendations

1) to focus on suicide statistics to obtain quality data

-if not done yet , to computerise the death certificates including the diverse information gathered with the causes and diagnosis at least for the young people

-to organise mandatory regular (each one to three month) meetings with forensic medicine and police officers to be able to enter and/or correct the data concerning suicide and this in each oblast with somebody in charge to check at national level that each oblast are behaving the same way

-to set up a small team either at the demographic and statistic national office or at the psychiatric national research office or at another place, to analyse the suicide data along the lines proposed above where psychiatrist and other professionals could in depth study and follow the phenomena in the young population

2) to abandon the project on suicidal attempts and key informants

3) to set up a team to prepare a general survey on mental health on adolescent with experts having the practice of children adolescents large mental health epidemiological surveys and publications on it and avoid surveys with detection since the resource to take care properly on this are present and if so not adequately trained . In addition the topic is too stigmatised and an anonymous survey, which should collect data on children and adolescents, parents and teachers, will serve to sensitize the people and will give time to organise the things in a way acceptable by the culture and the state of the mental health system in KZ

In addition it will be wise to wait until the regional West KZ survey results will be available so people could see what was working well and so not well and what was lacking for their purposes and make appropriate choices. At any rate, surveys in other regions will have to be made in order to cover the Kz situation ; this has not to be done in each oblast but a design has to be made to describe the diversity of situations and risks in KZ.

PDF of the references have been added as an annex and send in a separate message

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