Author's response to reviews

Title: Season of birth is different in Inuit suicide victims born into Traditional than into Modern Lifestyle. A register study from Greenland.

Authors:

Karin S Björkstén (Karin.Sparring.Bjorksten@ki.se)
Peter Bjerregaard (pb@si-folkesundhed.Dk)

Version: 4 Date: 1 April 2015

Author's response to reviews: see over
Comments to reviewer’s comments on Björkstén Season of Birth in suicides in Greenland

Comments to reviewer Sarah Fraser

ex: sentences 21-22: (suggestion) spring or summer "are at greater risk of committing suicide"
DONE

23: light availability at birth has been "observed in past research"
DONE

32: Data "regarding season of birth in the general population" were collected.
DONE

36: The suicide rate increased from very low "rates"
DONE

consider modifying lines 56-57
DONE- new sentence
A few studies have shown that the risk for suicide varies with season of birth and light has been proposed as a causative factor [11].

line 236 seems to have a mistake- difficult to understand
DONE Sentence re-written-
For calculation of the suicide rate per 100 000 person-years, the population of 1951 was selected to represent the population of 1951-1954 and the population of 1964 to represent the population of 1960-1967.

The paragraph entitled increased suicides is slightly odd as it seems to pull together different types of information within the paragraph without a clear understanding of the point of the paragraph. other than that the article is fluid and easy to understand.

COMMENT: We think that it is inevitable to discuss the massive increase in the rate of suicides in Greenland over the past decades.

Comments to reviewer Helinä Hakko

The revised version is much easier to read than the original submission. My opinion is that the revised version fulfils the criteria to be accepted for publication in BMC Psychiatry.

COMMENT: Thank you!

Comments to reviewer CK Law

Yet, as an academic writing, the authors should be aware of not emphasizing the
association of light and nutrition intake on birth seasonal pattern unless they can provide ample evidence to substantiate their linkage. This gives the audience a false expectation on the primary purpose of study, which would pose a poor impression on the study.

COMMENT: We have not claimed a direct association between light and nutrition. We have claimed an association between nutrition and season. Please read the sentence “Restricted foetal growth was associated with both attempted and completed suicide in the offspring in a large Swedish register study [38].”

In terms of study design, the authors compared the season of birth of suicide deceased between the two cohorts (traditional-lifestyle: 1903-50 vs. modern-lifestyle: 1960-80) during the 40-year period 1968 – 2007. Apparently, the comparison is not appropriate as the findings can also be influenced by age, rather by cohort, here. If I am correct, the study traced the suicide pattern for persons (traditional-lifestyle) from aged 18-53 years to 58-93 years while those from the modern-lifestyle cohort at their age of 0-8 years to 27-47 years. So, the birth seasonal pattern can be a feature of older adult suicide, but not a cohort difference in terms of lifestyle.

COMMENT: We added new calculations by splitting the data of the Old Lifestyle cohort into a younger and an older sub-group showing that data are still valid. We are fully aware that the cohorts are of different ages.

METHODS
"Due to the larger age variation in the Old Lifestyle cohort, the seasonal variation of Old Lifestyle cohort was also assessed after splitting the cohort in cases younger that 47 years and older than 46 years of age.”

RESULTS
“When splitting the cohort into a younger (Median 37: Range 17-46 years of age; n=151) and an older (Median 56; Range 47-84 years of age; n=123) subgroup, the seasonal variation was still significant (younger: n=151; r=0.17; Z=4.15; p<0.01) (older; n=123; r=0.20; Z=4.67; p<0.02). No further calculations were made for the subgroups. The seasonal pattern remained the same after adjusting for births in the population.”

DISCUSSION
“Another limitation is differences in the age distribution between the cohorts. The Traditional Lifestyle cohort is older than the Modern Lifestyle cohort, which lacks cases older than 47 years of age. Age per se can be considered a risk factor for suicide, but since living conditions for all ages have changed immensely, data for one age group cannot be extrapolated to the same age group in a different time and context. Few other publications in the field have addressed age differences.”

To define Inuit ethnicity, the authors used country of birth and assumed those born in Greenland were ethnic Inuit. As a closed population before the Second World War, I think this assumption would remain valid for traditional-lifestyle
cohort but may not hold for the modern-lifestyle cohort, if there are more ethnic
Danes settled in Greenland (17% of population born in Denmark in the 1970s)
and had their second generation after Greenland became a part of Denmark in
1953. Is there any information to indicate the deceased ethnicity in Greenland? If
not, this can be another possible factor in explaining why the birth seasonal
pattern disappeared among the Modern-lifestyle cohort.

COMMENT: Place of birth is the only variable describing ethnicity in public registers such as
the population register and the register of causes of death. In addition, the many Danes
settling in Greenland usually did so for only a few years and do not constitute a genuine part
of the Greenland society.

New sentence: “In spite of the increasing number of Danish residents in Greenland after 1960,
place of birth remains a valid proxy for ethnicity for the group of adults living in Greenland.”

In Line 172, I also found the inclusion criteria of suicide are not complete in the
analysis. As refer to ICD-10, intentional self-poisoning should be ranged from
X60-X69. Yet, it was reported X60-X65 in the revised draft. In fact, X66-X69
refers to gaseous poisoning (like charcoal burning, car exhaust, coal gas
poisoning). Why did the authors exclude these external causes in the analysis?
Similarly, X75 (Intentional self-harm by explosive material), X76 (Intentional
self-harm by smoke, fire and flames), X77 (Intentional self-harm by steam, hot
vapors and hot objects), X79 (Intentional self-harm by blunt object), X81
(Intentional self-harm by jumping or lying in front of moving object), X82
(Intentional self-harm by crashing of motor vehicle) and X83 (Intentional
self-harm by other specified means) were not included. Please explain.

Comment: The diagnoses cited include all diagnoses of suicides in Greenland and none were
excluded as implied by the referee.