

## WORD USE AND CONTENT ANALYSIS OF THE FIRST VERSES OF SIX NATIONAL ANTHEMS: A TRANSCULTURAL ASPECT OF SUICIDAL BEHAVIOUR

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### SUMMARY

**Background:** Suicide is a major health concern worldwide, although suicide rates widely differ among different countries and cultures. Transcultural studies suggest that national anthems reflect national attitudes towards self-harming behaviour as well. Our aim was to analyse the linguistic characteristics of six national anthems, and compare these results with national suicide rates.

**Methods:** Word use assessment and content analysis of six national anthems were performed.

**Results:** In the anthems of countries with similar historical or cultural background, similar linguistic patterns were found in word use and in content. Anthems of countries with lower suicide rates tend to contain relatively more positive contents, emotions and intentions, while in the anthems of countries with higher suicide rates more ambivalence, denial, loss or even aggressive and self-destructive implications were found.

**Conclusion:** This transcultural analysis strengthens previous data that anthems could be indicators for national attitudes toward self-harm.

**Key words:** suicide - content analysis - transcultural study - national anthems

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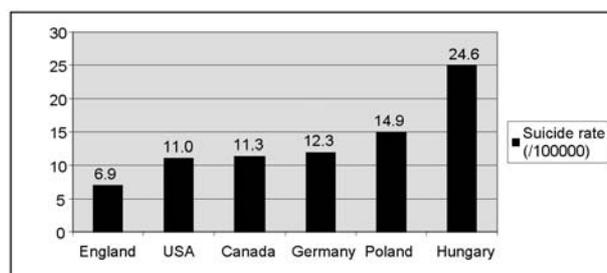
### INTRODUCTION

Suicide rates widely differ among different countries and cultures (WHO 2013) (Figure 1). The reason for these differences lies in the complex etiological background of suicidal behaviour, involving biological, psychiatric, psychological, social and cultural factors. Differences in the prevalence of mental disorders (Rihmer et al. 2002), and the effectiveness and availability of mental health care systems (Pirkola et al. 2009) may also contribute to international differences. There is a transcultural research activity on suicidal behaviour, including media studies, attitude assessments, and analysis of suicide notes or national texts and music (Osvath et al. 1996, Fekete et al. 2001).

Rihmer (1997), while investigating suicide rates of four European countries (Hungary, Austria, Poland and Greece) found that higher rate of deep tones in the melody of the first stanza of the anthem positively correlated with the suicide rate of the country. Based on this study, Lester & Gunn (2011b) investigated the complete melody of the anthems of 18 European countries, and also found a significant positive relationship. Furthermore, the same authors published positive correlation between the number of negative emotional words in the anthems and national suicide rates (Lester & Gunn 2011a).

Based on these previous findings our primary objective was to assess word use and to analyse the

linguistic structures and contents of six national anthems and to compare these results with suicide rates of the different countries. Our hypothesis was that linguistic features and contents reflect special national characteristics, and may have positive correlation with national suicide rates.



**Figure 1.** Suicide rates of the six countries in the year of 2010 (WHO 2013)

### METHODS

Linguistic and content analysis were performed to compare national anthems of six different countries with low, medium and high suicide rates as in the year of 2010 (low: England – 6.9; medium: USA – 11.0, Canada – 11.3, Germany – 12.3, Poland – 14.9; high: Hungary – 24.6/100000) (WHO 2013) (Table 1). The analyses were performed by the members of the study group according to an assessment tool developed to investigate national

**Table 1.** Relative frequency (%) of word use (1-6 categories) and contents (7-10 categories) in the first verses of national anthems of six countries with different (low – medium – high) suicide rates

	England	Canada	USA	Germany	Poland	Hungary
Suicide rate (/100000)	6.90	11.30	11.00	12.30	14.90	24.60
Word count (first verses)*	29	55	83	36	71	32
Personal*	10.34	9.09	3.61	2.77	15.49	0
Denial**	0	0	0	0	1.4	0
Label						
positive**	17.24	10.90	3.61	0	0	9.37
negative*	0	0	1.20	0	2.81	3.12
neutral**	6.89	5.45	6.02	0	0	0
Emotion						
positive*	3.44	1.81	1.20	0	1.40	6.25
negative	0	0	0	0	0	0
neutral	0	0	0	0	0	0
Aggression						
auto	0	0	0	0	0	0
hetero*	0	0	3.61	0	2.81	3.12
external	0	0	0	0	0	0
internal*	0	1.81	0	0	2.81	3.12
Salutation	10.34	9.09	2.40	5.55	8.45	3.12
Intention						
positive*	17.24	1.81	0	16.66	1.40	9.37
negative	0	0	0	0	0	0
reflexive	0	0	0	0	0	0
selfreflexive*	17.24	1.81	0	16.66	1.40	9.37
Loss**	0	0	2.40	0	2.81	6.25
Agent						
positive**	13.79	1.81	0	0	4.22	0
negative	0	0	0	0	0	0
Glory*	13.79	7.27	3.61	16.66	9.85	0

Kruskal-Wallis test; \* p<0.05, \*\* p<0.01

anthems, based on the Weintraub text analysis (Weintraub 1981). The official, original language lyrics of the first verses of the anthems were analysed by the study group with contribution of native speakers. After each rater assessed the lyrics of the anthems, a consensus version was used for further analysis.

During the analysis we investigated ten linguistic categories, six of them were to assess word use: personal contents; denial and disclaimer; labels (positive, negative and neutral qualifications); emotions (positive, negative and neutral affections); destruction (auto-, hetero-external and internal aggression); and salutation. Four categories referred to the content of the anthem: intentions (positive, negative, reflexive and self-reflexive desires); loss or damage; external agent (positive or negative); and glorious or solemn contents (Table 1).

While analysing word use, each word of the anthems were assessed and defined for the linguistic categories. During the content analysis, not the words, but linguistic structures and the meaning of the text were assessed. After the careful analysis, the relative frequency of the different linguistic structures and contents were calculated, then descriptive statistics were performed with the Statistical Package for the Social Sciences

(SPSS), version 13.0 statistical software. To compare the frequency of the different linguistic categories in the anthems of countries with low, medium, and high suicide rates Kruskal-Wallis non-parametric test was applied. These results were compared with suicide rates, the correlations of the linguistic categories with national suicide rates were calculated by Pearson's correlation test (Figure 1, Table 1).

## RESULTS

The six anthems significantly differed in most linguistic categories (Table 1). The British and the Canadian (countries with low and medium suicide rates) anthems contain the most positive contents, especially positive labels (17.24 and 10.90) and emotions (3.44 and 1.81), glorious contents (13.79 and 7.27), salutations (10.34 and 9.09) and personal motives (10.34 and 9.09), without any negative labels, emotions or aggressive implications.

The German and the American (countries with medium suicide rates) anthems have also many common features, but contrary to the previous ones, these are less personal (2.77 and 3.61) and refer less positive labels (0 and 3.61) and salutations (5.55 and 2.40). In the German

anthem glorious contents (16.66 v. 3.61), while in the American aggressive implications (3.61 v. 0) were found to be more common.

The Polish (medium suicide rate) and the Hungarian (high suicide rate) anthems differ in many respects from the above mentioned anthems and have several common features. These refer to the past more often, containing more negative labels (2.81 and 3.12), aggressive implications (2.81 and 3.12), denial (1.40 and 0) and actual or previous losses (2.81 and 6.25). However, the Polish anthem reflects more positive contents, it is more personal (15.49 vs. 0) containing more salutations (8.45 v. 3.12) and emphasizing glorious contents (9.85 v. 0) compared to the Hungarian.

The Hungarian anthem significantly differs from all the other anthems analysed in this study, as all anthems have some personal or glorious contents in their first verses, except the Hungarian. Furthermore, external aggressive (0.47) or self-destructive (2.35) hints were also found only in this anthem. The high rate of positive contents (9.37) together with the negative referrals (3.12), losses (6.25) and aggressive implications (3.12) reflects ambivalence.

According to the correlation analysis, suicide rates were positively correlated with some linguistic categories, such as loss, negative label and internal aggression. Negative association was found with glorious contents and with positive and neutral labels.

## DISCUSSION

All the first verses of the six anthems contain personal and glorious contents (except the Hungarian) and positive labels or emotions (except the German). The positive intentions in the anthems are self-reflexive, suggesting that future desires refer to the nation itself, without negative wishes against themselves or external agents and other nations. Denial, as a linguistic category is represented only in the Polish and the Hungarian anthems (both contain the word "not"), anthems of countries with higher suicide rate. Aggressive contents are presented in the American, the Polish and the Hungarian anthems. The Hungarian anthem refers to internal and hetero-aggression as well and is overrepresented with intense, ambivalent and contrary emotions. This is rather interesting in the light of that theory, which explains the high suicide rate in Hungary by the high number of affective disorders (including bipolar disorder) and affective temperaments among the Hungarians (Rihmer 1997, Gonda et al. 2011).

According to the analysis, the group of countries with different suicide rates differs in most linguistic features and contents in their anthems. Similar linguistic patterns were found in the anthems of countries with similar historical or cultural background. Some linguistic categories showed correlation with national suicide rates as well. Anthems of countries with lower suicide rates, especially the British tend to contain relatively

more personal and glorious contents and positive emotions or intentions. While the analysis of the Hungarian (country with high suicide rate) anthem revealed more ambivalence, loss, or even aggressive and self-destructive implications.

These results strengthen previous data by Lester & Gunn (2011a) concerning the correlation of suicide rates and anthem contents and melodies (Rihmer 1997, Lester & Gunn 2011b). This is not surprising, as content and melody both reflects and attenuates each other in a high-quality artistic work. It may also imply that the authors and the composers of the national anthems could represent the nation's historical and cultural background, or the so-called 'national identity', if it exists at all, could be related to affective temperaments, as suggested by Gonda et al. (2011).

Our findings are limited by the low number of anthems included in the analysis, and by the fact that the assessment was performed only in the first verses of the anthems. However, these are the widespread and well-known parts of the anthems, which could broadcast the most important verbal and hidden messages. Further limitation is that no inter-rater reliability was measured, because after each rater assessed the lyrics of the anthems, a consensus version was used for further analysis. Thus, more complex analyses of anthems of other countries with different suicide rates are needed to strengthen our data.

## CONCLUSION

Our results, together with the literature suggest, that the melody and the lyrics of the national anthems can be important hidden cultural indicators for national attitudes – towards self-harming behaviour and suicide as well – as those strongly reflect the 'national identity', which remains quite stable throughout time. These findings also strengthen data about the complex background of suicidal behaviour, that besides biological determinants, socio-cultural factors can also contribute to different suicide rates in different countries and cultures.

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**Conflict of interest:** None to declare.

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