Acculturation and mental health – empirical verification of J.W. Berry’s model of acculturative stress

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ABSTRACT
Objectives. Many studies concerning mental health among ethnic minorities have used the concept of acculturation as a model of explanation, in particular J.W. Berry’s model of acculturative stress. But Berry’s theory has only been empirically verified few times. The aims of the study were to examine whether Berry’s hypothesis about the connection between acculturation and mental health can be empirically verified for Greenlanders living in Denmark and to analyse whether acculturation plays a significant role for mental health among Greenlanders living in Denmark. Study design and methods. The study used data from the 1999 Health Profile for Greenlanders in Denmark. As measure of mental health we applied the General Health Questionnaire (GHQ-12). Acculturation was assessed from answers to questions about how the respondents value the fact that children maintain their traditional cultural identity as Greenlander and how well the respondents speak Greenlandic and Danish. The statistical methods included binary logistic regression. Results. We found no connection between Berry’s definition of acculturation and mental health among Greenlanders in Denmark. On the other hand, our findings showed a significant relation between mental health and gender, age, marital position, occupation and long-term illness. Conclusion. The findings indicate that acculturation in the way Berry defines it plays a lesser role for mental health among Greenlanders in Denmark than socio-demographic and socio-economic factors. Therefore we cannot empirically verify Berry’s hypothesis.

Keywords: Acculturation, acculturative stress, mental health, Greenlanders in Denmark.

INTRODUCTION
The concept of acculturation refers to the contact between two different cultures (e.g. ethnic groups), which can result in acculturative stress. The concept has been widely discussed and criticized for many years. Some scientists have criticized the concept for being negatively charged in the meaning of cultural loss, which means that one culture (the majority culture) overtakes the other culture (the minority culture) (1). But despite this criticism the concept of acculturation has been used as a model of explanation in many studies concerning lowered mental health among immigrants and ethnic minorities (2,3,4). Particularly the Canadian scientist J.W. Berry’s hypothesis about acculturation and acculturative stress has often been used. Berry has focused especially on acculturation among circumpolar people. Berry’s hypothesis has only very few times been empirically verified, despite the use of his model in many studies.

Berry defines acculturation at the individual level as: "behavioural and psychological changes in an individual that occur as a result of contact between people belonging to different culture groups" (5)
Berry sets up four modes of acculturation (figure 1): integration, assimilation, separation and marginalization, which are different attitudes of individuals towards acculturation. Integration refers to when an immigrant identifies and involves with both cultures. Assimilation refers to the situation where an immigrant chooses to identify solely with the new culture. Separation refers to when an immigrant is only involved in the traditional culture, and marginalization is characterized by lack of involvement and rejection of both cultures.

Berry thinks that changes in mental health vary across the four modes because of different levels of acculturative stress. He thinks that integration is the form of adaptation where the best mental health might be expected because of the lowest level of acculturative stress. Hereafter assimilation, separation and at last marginalization are the types where the poorest mental health might be expected. Berry weights cultural and psychological factors in his definition of acculturation and his model is only concerned with "cultural identity" and the "wish to enter into the new culture" (5,6,7).

According to Berry’s hypothesis we must expect that Greenlanders who are integrated have a lowered level of acculturative stress and therefore have better mental health than Greenlanders who can be placed in the three other modes of acculturation.

MATERIAL AND METHODS
We used data from the 1999 Health Profile for Greenlanders in Denmark, which is a cross-sectional population health survey of a randomly selected population of Greenlanders in Denmark. The data were collected in 1997--1999 by self-administered questionnaires. 2,099 Greenlanders, men and women, living in Denmark answered the questionnaires. From these, those with children were selected as the study population (929 persons). Questionnaires were mailed to a random sample of persons born in Greenland and now living in Denmark. A Greenlander was defined as a person with at least one parent born in Greenland. The response rate was 55%. Because there were only 14 persons in the age group 18-24 we ignored this group in the analysis.

To measure acculturation in the way Berry defines it we composed an acculturation variable based on two questions in the health survey. The first question (Figure 2) only concerns Greenlanders with children living in Denmark and we accordingly reduced the population to only include these. The question consists of four parts. The first three parts (a-c) illustrate how the respondents value the...
The fact that their children maintain their traditional cultural identity as Greenlanders. The last question (d) illustrates the wish that their children enter into the new culture – the Danish society. The second question (Figure 3) illustrates how well the respondents speak Greenlandic and Danish. Language is a good indicator of acculturation because it reflects the wish to either maintain the traditional cultural identity or enter into a new cultural context. In addition, language plays an important role for Greenlandic identity (8,9).

The first three parts of the first question (a-c) and the question concerning how well you speak Greenlandic make up the right box in Berry’s model "Is it considered to be of value to maintain cultural identity and characteristic?". The last part of the first question (d) and the question concerning how well you speak Danish make up the left box "Is it considered to be of value to maintain relationships with other groups?". Based on the answers the acculturation variable classified the respondents in the four modes of acculturation.

As a measurement of mental health we applied the 12-question General Health Questionnaire (GHQ-12), which measures psychological well-being within the last two weeks (10). Thus, the focus was general mental well-being among Greenlanders in Denmark and not psychiatric cases. GHQ-12 was pilot tested before it was used in the health survey and the cut-point between "normals" and "cases" was set at 2, i.e. participants with 2 or more points were classified as vulnerable. The choice of 2 as cut-point is supported by a later study (11).

We adjusted for a number of covariates: age, gender, occupation, marital position, place of growing up, place of residence in Denmark (urban/rural), number of years living in Denmark, al-
alcohol consumption, alcohol problems in childhood home and long-term illness. The statistical procedures included logistic regression analysis.

Figure 4 shows an overall picture of the relation between Berry’s theory and our measures and methods. It shows the two parts of the acculturation variable, the four modes of acculturation, the covariates and at last the mental health based on the General Health Questionnaire.

RESULTS

Table I shows the distribution of gender and age. A lot more women (76%) than men (24%) participated in the study. This reflects the population of Greenlanders in Denmark. The strongest represented age groups were 25-34-year-olds and 35-59-year-olds.

Table II shows that 20% of the respondents can be classified as integrated, 31% as assimilated, 30% as separated and 19% as marginalized. It also shows that 25% of the respondents can be classified as mentally vulnerable and 75% as mentally stable based on the GHQ-12.

Table III shows that when we only include age and gender in the multivariate analysis the acculturation variable is significantly related to GHQ-12.
We found it relevant to examine whether the acculturation variable had a significant relation with GHQ-12 if we adjusted for all the covariates. The results are listed in Table IV. Odds ratio and 95% confidence interval (95%CI) is given for the covariates showing a significant relation with GHQ-12. Men had less risk of being classified as vulnerable than women (OR=0.61, p=0.031). The chance of being classified as stable increased by age (p<0.001). Those who lived alone, were divorced, separated or widowed had a higher risk of being vulnerable than those who were married. The table shows that the unemployed had a considerably higher risk of being classified as vulnerable than the group of white collar I-II employees (OR=0.33, p=0.025), and finally it shows that those with long-term illness had a major risk of being vulnerable compared to those without long-term illness. (OR=1.87, p=0.001). The acculturation variable was not included in the last step in the logistic regression because it was not significantly related to GHQ-12 when we adjusted for all the covariates.

| GHQ-12 | P   | OR (95%CI)          |
|--------|-----|---------------------|
| Gender (ref.: women) |      |                     |
|       |     |                     |
| - Men | 0.031 | 0.61 (0.39-0.96)    |
| Age   | <0.001 | 0.96 (0.94-0.98)    |
| Marital position (ref.: married) |      |                     |
|       |     |                     |
| - Single | 0.005 | 2.32 (1.29-4.19)    |
| - Cohabiting | 0.012 | 1.74 (1.13-2.68)    |
| - Divorced, separated, widowed | 0.001 | 2.62 (1.50-4.56)    |
| Occupation (ref.: white collar I-II) | 0.012 |
|       |     |                     |
| - Traditional |      |                     |
| - White collar III |      |                     |
| - Semiskilled | 0.025 | 0.33 (0.13-0.87)    |
| - Unskilled |      |                     |
| - Unemployed | 0.044 | 1.94 (1.02-3.70)    |
| - Pensioner |      |                     |
| - Under education |      |                     |
| - Others |      |                     |
| Long-term illness (ref.: no) |      |                     |
| - Yes | 0.001 | 1.87 (1.30-2.70)    |

DISCUSSION

Acculturation plays a lesser role for mental health among Greenlanders living in Denmark than the covariates sex, age, marital position, occupation and long-term illness. Therefore we cannot verify Berry’s hypothesis about the relation between acculturation and mental health.

The reason why the acculturation variable is excluded from the logistic regression model might be that the covariates overtake the significant relation to GHQ-12 which the acculturation variable would otherwise have had, so the contribution of acculturation becomes diluted when several predictor variables are used in the regression model.

Despite our results we will not reject the existence of a relation between acculturation and mental health among Greenlanders living in Denmark. But the relation has to be found either with another construction of the acculturation variable or using another definition of acculturation than Berry’s.

Actually there are no limits to the number of dimensions the concept of acculturation can include. Berry only includes psychological dimensions in his definition and he attaches great importance to cultural values, opinions and identity. But our findings indicate that the most important factors for mental health among Greenlanders in Denmark are socio-demographic and socio-economic factors and the "lived life". Therefore we suggest that a possible relation between acculturation and mental health must be seen from another point of view than Berry’s theory.

Another reason why we cannot verify Berry’s hypothesis might be because of our method and measures, e.g. the way we constructed the acculturation variable. Maybe the result had been different with an acculturation variable based on other questions. We must also be aware of selection bias and information bias in the study. It is
probably only Greenlanders with a certain amount of resources who have answered the questionnaires and not the mentally most vulnerable Greenlanders, and the result might not be representative for all Greenlanders in Denmark.

REFERENCES

1. Escobar JL, Vega WA. Mental Health and Immigrations AAA: Where are we and where do we go from here? J Nerv Ment Dis 2000; 188:736-740.
2. Gavin BE, Kelly BD, Lane A, O’Callaghan E. The mental health of migrants. Ir Med J 2001;94:229-230.
3. Brown R. Indigenous Mental Health: The Rainbow Serpent Awakening. Int J Psychiatr Nurs Res 1999;4:475-481.
4. Escobar JL, Nervi CH, Gara MA. Immigration and Mental Health: Mexican Americans in the United States. Harv Rev Psychiatry 2000;8:64-72.
5. Sam DL, Berry JW. Acculturative stress among young immigrants in Norway. Scand J Psychol 1995;36 (1):10-24.
6. Berry JW. Psychology of Acculturation. Nebraska Symposium on Motivation 1989. University of Nebraska Press Lincoln and London 1990;37:201-234.
7. Berry JW. Acculturative Stress in Northern Canada: ecological, cultural and psychological factors. Proceedings of the Third International Symposium on Circumpolar Health. University of Toronto Press 1976:490-497.
8. Bjerregaard P, Curtis C. Cultural change and mental health in Greenland: the association of childhood conditions, language, and urbanization with mental health and suicidal thoughts among the Inuit of Greenland. Soc Sci Med 2002;54:33-48.
9. Tuxen V, Rasmussen NA. Grønlænder mellem to kulturer. [Greenlanders between two cultures]. Stofskifte: Tidsskrift for antropologi 1989:5-20.
10. Goldberg DP. A User’s guide to the general health questionnaire. Windsor: NFER-NELSON, 1988.
11. Lynge I, Jørgensen PM, Pedersen AL, Mulvad G, Bjerregaard P. Psykisk helbred hos patienter i Grønlands sundhedsvæsen. [Mental health among patients in primary health care in Greenland]. Statens Institut for Folkesundhed, København 2003.

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