

Hypoglycemia perception: Cross-cultural differences in Punjabi and Hindi speaking postmenopausal women

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ABSTRACT

Introduction: The cross cultural differences in perception of menopausal symptoms are well known and these differences in perception of hypoglycemic symptoms in Russian-speaking and Caucasian postmenopausal women have been reported. **Aims and objectives:** This study assessed cross – linguistic and cross – cultural differences in symptomatology of self reported hypoglycemia, between Punjabi and Hindi speaking diabetic post menopausal women. **Material and Methods:** Thirty Punjabi speaking and 20 Hindi speaking diabetic postmenopausal women aged over 50 years, were recruited for this study. Each subject was asked, what happens to you when you have low sugar? in the language of her choice, and spontaneous answers were recorded verbatim. **Statistical analysis:** The data so obtained was analyzed by paper and pen method to obtain an understanding of the frequency of self reporting of various symptoms and then analyzed using Statistical Package for Social Science ver.19.0. **Results:** Symptoms of hollowness, cold sweats and headache correlated significantly ($P < 0.0001$, $P = 0.0001$ and $P = 0.03$ respectively). One difference was noted in women from rural vs. urban background: Inability to concentrate was more frequent in urban women (4/23) vs rural women (0/27) ($P < 0.0001$). **Discussion:** To our knowledge, this is the first exploratory work highlighting the differences in self reported hypoglycemia symptomatology, based on linguistic background. In India and other countries with multi ethnic, multi linguistic societies, linguistic competence in hypoglycemia history taking is important. **Limitations:** Incidence of hypoglycemia in the subjects enrolled was not assessed. Many of the subjects in the Punjabi speaking cohort were bilingual. Some symptoms of hypoglycemia may have been missed or over-reported by participants. **Conclusion:** Diabetes care professionals should be aware that persons with diabetes from varying linguistic backgrounds may report symptoms of hypoglycemia differently.

Key words: Diabetes in pregnancy, ethnopharmacy, history, gestational diabetes, linguistic differences, regional diabetes management

INTRODUCTION

The cross-cultural differences in perception of symptoms of certain endocrine disorders, such as menopause, are well known. Japanese women tend to report lower frequency of physical symptoms, such as hot flashes, as compared

to their Caucasian peers.^[1] Similar differences in attitudes towards the symptoms of menopause have been reported in women of other ethnicities.^[2,3]

Recently, researchers working with Slavic (Russian-speaking) and Caucasian postmenopausal women have reported cross-cultural differences in perception of hypoglycemic symptoms. Slavic women tended to report less, but more holistic symptoms of hypoglycemia, while Caucasians complained of more frequent, somatic, symptoms of hypoglycemia.^[4]

This stimulated us to search for cross-linguistic or cross-cultural differences in hypoglycemia reporting within the Punjabi and Hindi speaking populations that we serve.

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MATERIALS AND METHODS

This study was designed as a prospective mixed qualitative and quantitative study, at a single endocrine center, to assess cross-linguistic and cross-cultural differences in frequency and symptomatology of self-reported hypoglycemia, between Punjabi and Hindi speaking postmenopausal women with diabetes, on insulin therapy.

Thirty Punjabi speaking and 20 Hindi speaking postmenopausal women, aged over 50 years, were recruited for this study, over a period of 1 month. All patients were known patients of type 2 diabetes for at least 1 year and had been on regular outdoor follow-up for at least 1 year. All subjects gave an informed consent, after which they were administered a semistructured questionnaire which captured basic personal and medical history. Each patient was asked the question, “what happens to you when you have low sugar?,” in the language of her choice, and her spontaneous answers recorded verbatim. After the subject mentioned that she had no other symptoms to report, she was shown an exhaustive list of symptoms of hypoglycemia, written in Devnagari or Gurmukhi script, to confirm that she had not forgotten any symptoms. Subjects requiring help in reading were assisted by a trained paramedical staff. The symptoms of hypoglycemia were grouped into four parts: General, adrenergic, neuroglycopenic, and nocturnal symptoms.

Statistical Analysis

The data so obtained was analyzed by paper and pen method, by the lead author, to obtain an understanding of the frequency of self-reporting of various symptoms. It was then analyzed using Statistical Packages for Social Sciences version 19.0.

Correlation of frequency of self-reporting of the different symptoms was assessed with age, language, rural/urban residence, education, and use of various insulin regimes. For simplicity, only the 10 most frequently reported symptoms were assessed for correlation with the variables. Other symptoms, which were reported less than five times, within the total cohort of 50, that is, with a frequency <5%, were excluded from study.

The symptoms studied were:

1. Hollowness
2. Cold sweats
3. Sweats
4. Giddiness
5. Headache
6. Anger
7. Hunger
8. Inability to concentrate
9. Inability to work

10. Hot flash
11. Uneasiness
12. Feeling of being sick
13. Trembling.

Of these, three symptoms were not studied further because of the low frequency of occurrence: Anger, inability to concentrate, and inability to work.

RESULTS

The disposition of all subjects is presented in Table 1.

The frequency of various self-reported symptoms is presented in Table 2. No effort was made to collate the frequency of hypoglycemia. The emphasis was on quantifying frequency of different symptoms of the condition.

There was no difference in the symptomatology frequency in women of different age groups, of women from different educational status groups. Only one difference was noted in women from rural vs urban background: Inability to concentrate was more frequent in urban women (4/23) vs rural women (0/27) ($P < 0.0001$).

DISCUSSION

This exploratory work highlights the differences in self-reported hypoglycemia symptomatology, based on

Table 1: Disposition of subjects

	Hindi speaking	Punjabi speaking	Total
Mean age (years)	20	30	50
Rural patients	15	12	27
Education <10 th standard	16	8	24
Education 12 th standard	3	17	20
Education above 12 th standard	1	5	6
Once daily insulin	9	17	26
Twice daily insulin	6	8	14
Three/four insulin injections/day	5	5	10

Table 2: Frequency of symptoms according to language

Symptoms	Hindi speaking (n=20)	Punjabi speaking (n=30)	P value
Hollowness	1	17	<0.0001
Cold sweats	2	17	0.0001
Sweats	7	11	NS
Giddiness	11	13	NS
Headache	0	6	0.033
Hunger	8	18	NS
Hot flash	4	3	NS
Uneasiness	5	9	NS
Feeling of being sick	9	7	NS

NS: Not significant

linguistic background. To our knowledge, this is the first work to quantify this aspect of hypoglycemia. This is an important part of clinical medicine, yet one which has sparsely been reported in qualitative literature so far.^[4]

The current study reveals the higher prevalence of certain symptoms suggestive of hypoglycemia; viz. feeling of hollowness in the abdomen, cold sweats, and headache; in Punjabi speaking postmenopausal women with diabetes, as compared to their Hindi speaking counterparts. It also reports more frequent presence of the symptom of inability to concentrate in urban women, as compared to rural women.

These findings are important as they have a bearing on the detection of hypoglycemia, a condition which has far reaching health consequences. Undetected hypoglycemia is associated with a wide range of complications, and may lead to death. Inability to take a complete history, on part of the health care professional, may be a major error of omission in this field, if he or she is unable to recognize warning symptoms of hypoglycemia being reported by the person with diabetes. This becomes especially important for the group of subjects studied by us, the elderly postmenopausal women. In India, and other countries, with multiethnic, multilingual societies, therefore, linguistic competence in hypoglycemia history taking becomes an imperative part of a diabetes care professional's training.

Our exploratory study does have a few limitations. No effort was made to assess the incidence of hypoglycemia in the subjects enrolled, neither was biochemical monitoring done to prove hypoglycemia during the episodes of symptoms mentioned by them. However, these were all "booked" patients at the site of study conduct, had been on regular follow-up, and had been participating regularly in diabetes education sessions. It is safe to presume, therefore, that the subjects had a fair idea of hypoglycemia, and could answer the study question "what happens to you when you have low sugar?" accurately.

Many of the subjects in the Punjabi speaking cohort were bilingual. In such cases, the choice of language was left

to the participating subject. In practical terms, however, this issue (choice of reporting language) usually does not pose a dilemma to either the person with diabetes, or her diabetes care professional.

Other symptoms of hypoglycemia may have been missed by reporting participants, and some symptoms may have been over-reported by others. While this may have some basis, the study does highlight a linguistic basis of such symptomatology.

Another potential bias may be the linguistic capability of the investigator, who may be able to ferret out more symptoms in a language that he or she is well-versed in. The subject-centric approach followed in this study; however, asking them to self-report, obviates this bias.

CONCLUSION

Symptomatology of hypoglycemia can differ according to language of reporting. This issue deserves much more attention than it receives currently. Diabetes care professionals should be aware that persons with diabetes from different linguistic backgrounds may report symptoms of hypoglycemia in varying manners. This information can be potentially lifesaving.

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