INTRODUCTION: Synthetic antidiabetic drugs have been reported to exhibit deleterious effects and have failed to alter the course of diabetic complications. Traditional medicinal plants possessing antidiabetic effects can be a valuable source for the development of safer oral hypoglycemic agents. Since medicinal plant’s knowledge is based on cultural practice and oral transmission from one generation to the next which is liable to fade away if not documented properly and preserved. Documentation and preservation of ethnomedicinal practices of medicinal plants is extremely necessary not only to conserve cultural practices and biodiversity, but also for drug discovery and to improve community health care systems. Although, many ethnomedicinal surveys have been conducted and successfully accomplished by various researchers across different zones and communities in Malaysia [1-3] to the best of our knowledge, no such survey has ever been reported in Bangi, Selangor, Malaysia particularly on the medicinal plants that are used in the management of diabetes. In order to preserve this valuable knowledge, this study therefore aimed to record the ethnomedicinal plants used for diabetes by local practitioners in Bangi community, Selangor, Malaysia.

SAMPLING:

Four villages surrounding the town, kampung batu lima kampung rinching, kampung bahagia, and kampung Bangi, were sampled. These kampungs (villages) sampled fall within 3 kilometers distance to and from Bangi.

DATA COLLECTION:

- Face to face discussion and questionnaires were used
- Information obtained includes:
  - Names, age of the respondent.
  - Local names of the plants
  - Origin of the plants.
- A total of 100 respondents falling within the age bracket of 35 and 75 (male and female) were included in the study.
- Interview and questionnaires were conducted and written in Malay language.

RESULT ANALYSIS:

- Percentages of the plant status, parts used, method of preparation, and types of plants were calculated.
- Relative citation index (RCI) for each species was also calculated based on the formula RCI=CI/N.
- Citation Index, CI was used to measure the frequency of citation of a particular species by the respondents.

RESPONDENTS’ DEMOGRAPHIC FEATURES:

- Informants that participated in the questionnaires include;
  - 33 respondents from kampung Bangi
  - 26 respondents were from kampung Batu Lima
  - 21 respondents were from kampung Rinching
  - 20 respondents were from kampung Bahagia
- Face-to-face interview was strictly followed to assess and record the demographic features of all respondents.
- Low participation of women in all the kampungs were observed as it was also reported by the researchers in previous similar studies [6-7].

SPECIMENS SAMPLED:

The study indicates that herbal practitioners in Bangi have been using 30 species of different medicinal plants to treat diabetes. They comprised of 25 families and 29 genera.

Five out of these families, viz., Anacardiaceae, Asteraceae, Fabaceae, Lamiaceae and Moraceae are represented by two species while the remaining families have one species.

<table>
<thead>
<tr>
<th>Family Name</th>
<th>Common Name</th>
<th>Local Names</th>
<th>Parts Used</th>
<th>Preparation</th>
<th>RCI</th>
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<tbody>
<tr>
<td>Anacardiaceae</td>
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<td>Asteraceae</td>
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<td>Lamiaceae</td>
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<td>Moraceae</td>
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</tbody>
</table>

Leaf was reported to be the most frequently used with 43.3% followed by root (26.7%) and stem bark (10%), respectively.

The most frequently used method of preparation as obtained from the informants was decoction followed by infusion and raw eating with 30% and 6.7% respectively.

Among all the plants, A. vera has the highest RCI with 0.1 followed by H. rosa sinensis, P. guajava and C. citratus with 0.09, 0.08 and 0.07 RCI, respectively.

Three plants viz. Polyalthia bulatta, Raurea concolor and Smilax myosotiflora have never been scientifically validated for their traditional use as antidiabetic agents.

Plant species for diabetes treatment varied in every village due to the differences in rate of industrialization, urbanization and environmental degradation.

CONCLUSION: This study has successfully recognized the plants most commonly used by local practitioners in Bangi community to treat diabetes. Research studies on P bulatta, R concolor and S myosotiflora might furnish a new class of safe antidiabetic agents.

Acknowledgement

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References

2. Mohamed NS, Mohd F, Ong HC. Traditional medicinal plants used by the Kensiu tribe of Lubuk Ulu Legong, Kedah, Malaysia. Ethnopharmacol Res 2012; 0: 196-201.
5. NorBashirah M. Documentation and valuation of plant resources used by the Orang Asli at Kampung Lebak Ulu Legong, Kedah, Malaysia. Doctoral dis- sertation, University of Malaya 2016.