Literature to back KAP categorization

Ahmed, S. A., Sabitu, K., Idris, S. H., & Ahmed, R. (2013). Knowledge, attitude and practice of cervical cancer screening among market women in Zaria, Nigeria. *Nigerian Medical Journal*, *54*(5), 316-319

Ahmed, S.A., Sabitu, K, Idris, S.H., & Ahmed, R. (2013) in a study to assess knowledge attitude and practices in cervical cancer screening among women in Zaria, Nigeria categorized knowledge, attitude and practice as poor and good. The knowledge score score ranged from 0-20, attitude 0-7 and practice 0-4. Poor knowledge (0-9) and good (10-20). Poor Attitude (0-3) and good (4-7). Poor Practice (0-2) and good (3-4)

Data analysis Data were analysed using SPSS version 11. The results were summarised into tables, charts and graphs and were subjected to test of statistical significance, where necessary. The knowledge, attitude and practice of cervical cancer screening were scored using the responses from the questions asked, with each correct answer having one point and wrong responses scoring zero. Knowledge score ranged from 0-20, attitude 0-7 and practice 0-4. Knowledge score was categorised thus: Poor (0-9) and Good (10-20). Attitude score categorisation was: Poor (0-3) and Good (4-7); while practice score categorised as Poor (0-2), and Good (≥3).

Herath, H.M.M., Weerasinghe, N.P., Dias, H. *et al.* Knowledge, attitude and practice related to diabetes mellitus among the general public in Galle district in Southern Sri Lanka: a pilot study. *BMC Public Health* **17**, 535 (2017). https://doi.org/10.1186/s12889-017-4459-5

Herath, H.M.M., Weerasinghe, N.P., H. et al 2017 in a study Knowledge, attitude and practice related to diabetes mellitus among the general public in Galle district in Southern Sri Lanka scored good knowledge as 19-26, moderate as 14-18 and poor as less than 14

### Knowledge assessment

Knowledge was measured using 8 main questions related to diagnosis, risk factors, prevention, and complications of DM. The mean (CI) knowledge score of the total sample was 16.5 (0.51). Around 37% of the participants scored 19 or more out of 26, and was categorised as having good level of knowledge. Out of the total score of 26, 23% of participants scored less than 14 (poor knowledge) and 39% scored between14 to 18 points (moderate knowledge). With regard to the pathophysiology of diabetes, 87% were aware that diabetes is a disease characterised by elevated blood sugar.

### Attitudes assessment

Attitude was assessed with seven questions and participants who got 4 or more marks were considered as having positive attitudes. Surprisingly, majority (88%) had poor attitude towards diabetes. About 73% believed that long term use of medications for diabetes will eventually lead to organ dysfunction. Close to 38% of participants who have heard about metformin believed that long term use of metformin can lead to kidney damage. Around 73% believed that use of alternative medicine such as Thebu leaves (*Costus speciosus*) was more beneficial than the standard treatments. Around 20% of participants thought that long-term use of daily insulin injections was harmful even when it was indicated to control blood sugar. Furthermore, about 18% believed that the other complementary and alternative treatments such as acupuncture, bali-thovil (traditional devil dance), herbal remedies, etc. were better in controlling DM than the usual methods such as diet and medications (Fig. [2](https://link.springer.com/article/10.1186/s12889-017-4459-5#Fig2)). Unlike knowledge, attitude had no significant association with level of education. In addition, other factors such as knowledge on DM, gender, and socio-economic status were also not associated with attitudes

### Practices assessment

Practices were assessed using questions on participant’s intention to seek treatment, and preventive measures such as screening for DM, diet and, exercise. The majority (90%) stated that they will seek some form of treatment if they or their family members are found to have DM (Fig. [3](https://link.springer.com/article/10.1186/s12889-017-4459-5#Fig3)). However, more than half of study subjects had never checked their blood sugar level and only around 30% had regular screening for DM with annual blood glucose measurements. About 65% take refine sugar liberally and a large majority (80%) didn’t involve with regular exercises (Fig. [3](https://link.springer.com/article/10.1186/s12889-017-4459-5#Fig3)). After adjusting for the covariates, individuals with good socio-economic status had regular blood sugar measurement (Table [4](https://link.springer.com/article/10.1186/s12889-017-4459-5#Tab4)) than people with poor socio economic status (*p* = 0.005).

Fatema, K., Hossain, S., Natasha, K. *et al.* Knowledge attitude and practice regarding diabetes mellitus among Nondiabetic and diabetic study participants in Bangladesh. *BMC Public Health* **17**, 364 (2017). https://doi.org/10.1186/s12889-017-4285-9

**KAP scoring**

For analysis, a total of 16 items were included in the knowledge section which included elementary knowledge of diabetes, benefits of exercise, complications of diabetes, groupings of foods and their exchange list, ideal body weight and obesity. For the sixteen items knowledge question, the maximum attainable score was ‘16’ and the minimum score was ‘0’.

Likewise, in the attitude section, a total of 8 items were included which consisted of respondents attitude towards diabetes. A three point Likert scale was used to measure attitude. Questions evaluating attitude towards the treatment of diabetes were associated with the three categories of response: ‘agree’, ‘neither agree nor disagree’ and ‘disagree’. Each positive response (agree) was assigned a score of ‘1’, and each negative response as a score of ‘0’. For the eight attitude related questions the maximum attainable score was ‘8’ and the minimum score was ‘0’. In the same manner, for the eight items in the practice category, such as glucose monitoring, physician visit, weight management, exercise, foot care, smoking, consumption of betel nuts, extra salt intake, groupings of foods and their exchange list, the maximum attainable score was ‘8’ and minimum was ‘0’. The combined level of knowledge, attitude and practice (KAP) was classified according to each respondent’s score. Poor knowledge and practice corresponded to a score of (<Mean – 1 SD); average knowledge and practice corresponded to a score between (Mean ± 1 SD); good knowledge and practice corresponded to a score of (>Mean ± 1 SD) [[21](https://link.springer.com/article/10.1186/s12889-017-4285-9#ref-CR21)]. Informed written consent was obtained from all respondents after a full explanation of the nature, purpose, and procedures used for the study. Participants were informed about their right to withdraw from the study at any stage of the study. Ethical approval was obtained from the ethics and Research Review Committee of the Diabetic Association of Bangladesh

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