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Impact of Socioeconomic Status on the Prevalence of Complications in Type 2 Diabetes in Indian Population: a Systematic Review

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INTRODUCTION

- Type 2 diabetes mellitus (T2DM) is a global burden: about 382 million people have diabetes in the world.[1]
- India has about 65.1 million diagnosed diabetics.[1]
- India is set to become the diabetic capital of the world: The WHO projects that India will have about 80 million diabetics – the highest in the world – by 2030.[2]
- Complications of uncontrolled DM include conditions involving almost all body systems, specially cardiovascular, ocular, neurological and renal systems.
- Diabetes is a costly condition: it is estimated that in India, on an average, 1/4th of the total family income is allocated to the patient care in a low-income family with one diabetic adult.[3]

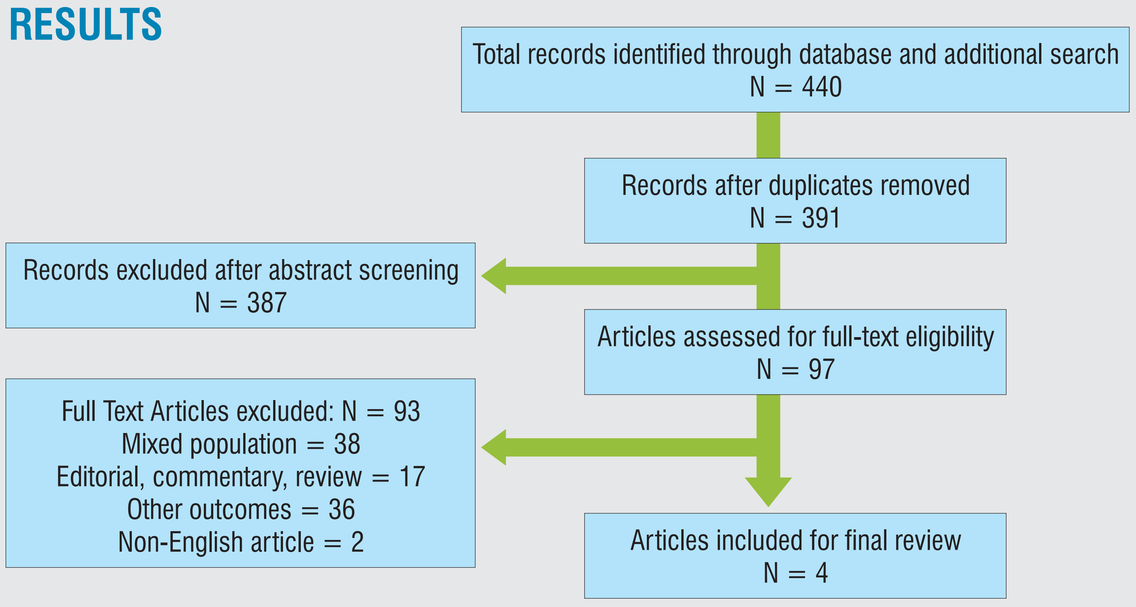
OBJECTIVE

- To determine the association between socioeconomic status (SES) and complications associated with Type 2 Diabetes Mellitus in India.

MATERIALS AND METHODS

- Literature search was conducted in databases such as PubMed, EMBASE and the Cochrane library without any restrictions.
- References of the included studies were screened for additional studies.
- Observational studies focusing on association between SES and T2DM patients were included.
- The quality of the studies was assessed using the Newcastle-Ottawa scale.[4]
- Two authors independently performed the study selection, data extraction and the quality assessment process.
- A third author reviewed the output and adjudicated discussions in case of disagreement.

RESULTS



No.	Study	SE Status	Complication and Association	Remarks
1	Rani PK et al, 2012[5]	Low	Visual impairment: Higher risk	• OR 2.91 • 95% CI: 1.24-6.85
2	Bansal D et al, 2014a[6]	Low	Diabetic Peripheral Neuropathy: Higher % prevalence	• Low SES: 48.4% • Upper SES: 10.2%
3	Raman R et al, 2010[7]	Low	Cataract: Higher risk	• OR: 1.67 • 95% CI: 1.10-2.54
3	Bansal D et al, 2014b[8]	All	Microvascular complications: no association	No significant differences between SES groups in the occurrence of any form of microvascular complications

- One study by Rani PK et al,[5] reported approximately three fold higher risk of developing visual impairment in diabetic subjects with low SES [odds ratio (OR), 2.91; 95% confidence interval (CI), 1.24 to 6.85].
- A study by Bansal D et al[6], reported significantly higher prevalence of diabetes peripheral neuropathy in lower SES (48.4%) group compared to upper SES group (10.2%) ($p<0.001$).
- The risk of cataract was higher among diabetes subjects with low SES group, when compared to higher SES group (OR, 1.67; 95% CI, 1.10 to 2.54) in a study published by Raman R et al.[7]
- Bansal D et al,[8] focusing on only newly diagnosed type 2 diabetes patients, demonstrated no significant differences across all SES groups in the occurrence of any form of micro-vascular complications.

DISCUSSION

- Diabetes is an expensive condition.
- In USA, it is estimated that the annual cost of diabetes is 91.8 billion dollars.[9]
- This includes 49% direct and 51% indirect costs.[9]
- In 2009, each person with diabetes in the US spent $11,700 compared to $4,400 spent by each person without diabetes.[10]
- In the West Pacific Region, WHO has reported that around 16% of all hospital costs are related to diabetes.[11]
- Diabetes is a chronic condition which requires lifelong medication.[12]
- Thus, people with lower socio-economic status who cannot afford the expenses associated with diabetes can be expected to be under-treated.
- With this idea, the present study was performed to assess whether diabetics from lower socio-economic status are associated with a higher burden of diabetes related complications.

CONCLUSIONS

- We found very limited evidence regarding the association between socioeconomic status and diabetes complications.
- There is a need for educating patients with low SES to prevent long term complications in Indian T2DM patients.
- More observational studies are required to be conducted in the future in this context.

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