IDC INTERNATIONAL JOURNAL

OPEN ACCESS

International Online Peer- Reviewed, Referred, Indexed Journal *August – October 2025* Volume: 12 Issue: 4

HYPOGLYCEMIA MANAGEMENT AMONG DIABETIC PATIENTS: A REVIEW OF LITERATURE

Mrs. Rashmi Behera* | Dr. Darshan Kaur Sohi| Dr. Manjubala Dash*****

**Research Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India.*

***Research Supervisor, Himalayan University, Itanagar, Arunachal Pradesh, India.*

****Co-Supervisor, Himalayan University, Itanagar, Arunachal Pradesh, India.*

https://doi.org/10.47211/idcij.2025.v12i04.005

ABSTRACT

Diabetes—it's everywhere, one of those chronic illnesses that just won't quit, messing with more lives every year. And if you've ever tried to actually manage diabetes? Hypoglycaemia is like that annoying plot twist nobody wants. It's not just a little hiccup, either—low blood sugar can seriously wreck your day (or worse).

Now, people have been studying this disease for long. There's a lot of research looking at how often hypoglycaemia reflects up, whether humans actually know what it is, and how they feel about it. Turns out, our age, background, stress levels—can really shape your experience with low blood sugar. And, let's be real, not everyone's on the same page when it comes to awareness. But here's one thing most importantly that is education matters. Like, a lot. The more we know, the better we handle the problem. People who get legit info about hypoglycaemia freak out less and take better care of themselves. Doesn't matter if they have got Type 1 or Type 2, hypoglycaemia is lurking either way, but knowledge is power (and apparently, way less panic). A systematic review of literature and appraisal of all the relevant scholarly literature on the topic involves an in-depth study. An extensive review of literature was done on the related research and non-research literature. So, after digging through two decades' worth of studies, the message is pretty clear: keep the education coming. Patients need it, support systems matter, and honestly, there's no such thing as too much help when you're living with diabetes.

Keywords: *Diabetes mellitus, hypoglycaemia, prevalence, awareness, knowledge, attitude, patient education, glycaemic control.*

ABOUT AUTHORS:

Author, Mrs. Rashmi Behera is a Ph.D. Scholar at Himalayan University, Itanagar, Arunachal Pradesh, India. Her academic interests include diabetes management, patient education, and prevention of metabolic complications. Through her research, she aims to enhance clinical awareness and empower diabetic clients to manage hypoglycaemia effectively through structured educational interventions.

Dr. Darshan Sohi is a distinguished research supervisor at Himalayan University, Itanagar, Arunachal Pradesh, India. With extensive experience in nursing and healthcare sciences, she has guided numerous postgraduate and Ph.D. scholars in evidence-based research. Her work emphasizes patient-centered care, innovative teaching, and the advancement of nursing education and research in India.

Dr. Manjubala Dash is a dedicated nursing educator and researcher with extensive experience across diverse domains of nursing and healthcare sciences, including maternal and women's health. She has successfully guided numerous postgraduate and Ph.D. scholars in clinical and educational research, emphasizing evidence-based practices, and preventive healthcare interventions.

IDC INTERNATIONAL JOURNAL
OPEN ACCESS
International Online Peer- Reviewed, Referred, Indexed Journal August – October 2025 Volume: 12 Issue: 4

INTRODUCTION

Diabetes is basically this lifelong issue where your body just can't get its act together with blood sugar. Either the insulin's slacking off, or your cells are acting like stubborn toddlers and ignoring it. We've got all these fancy treatments now, but honestly, wrangling diabetes is still a juggling act—especially because of hypoglycaemia. That's when your blood sugar drops way too low, and yes, it can get scary fast. We're talking shaky hands, confusion. And don't even us me started on how much it messes with people's heads, moods, and social lives. Imagine being afraid to go out for pizza with friends because your sugar might tank. Not fun. So in this article have reviewed literature, you have to know what's already out there before you can figure out what's missing or what needs fixing. This review basically takes a hard look at what researchers have said about diabetes, how common hypoglycaemia actually is, and how much folks with diabetes know (or don't know) about handling those low blood sugar episodes. The whole idea is to pull together info from all over the place—local studies, international ones, you name it—to paint a clearer picture of what's going on with hypoglycaemia in diabetes care.

METHODOLOGY OF REVIEW

This review systematically analysed relevant scholarly literature. Sources included peer-reviewed journals, research reports, and theoretical papers indexed in databases such as PubMed, Scopus, and Google Scholar. Studies were selected based on relevance to the key themes—prevalence, awareness, knowledge, and attitude regarding hypoglycaemia among diabetic patients. Both quantitative and qualitative studies were included to ensure a holistic understanding of the topic.

REVIEW OF LITERATURE

1. Literature related to Diabetes Mellitus

The literature demonstrates that hypoglycaemia is a frequent and serious concern among diabetic patients, particularly those on insulin therapy. Studies reveal that severe hypoglycaemia occurs in approximately 35–42% of individuals with Type 1 diabetes mellitus (T1DM), with incidence rates ranging from 90 to 130 episodes per 100 patient-years (Heller et al., 2018). The Hypoglycaemia Study Group (2017) found that patients with a longer duration of diabetes (>15 years) experienced significantly higher rates of severe hypoglycaemia (46%) compared to those with shorter durations (<5 years) at 22%. This association highlights the cumulative risk associated with prolonged insulin use and disease progression.

Similarly, a retrospective study conducted in Denmark among insulin-treated Type 2 diabetes mellitus (T2DM) patients reported that 16.5% experienced at least one episode of severe hypoglycaemia, with an incidence of 44 episodes per 100 patient-years (Pedersen-Bjergaard et al., 2004). The Diabetes Audit and Research in Tayside Study (DARTS) further indicated a prevalence of severe hypoglycaemia in 7.1% of Type 1 and 7.3% of insulin-treated Type 2 diabetic patients, compared with only 0.8% among those managed with oral agents (Leese et al., 2003).

Beyond the physical consequences, hypoglycaemic events significantly increase healthcare costs and disrupt patients' quality of life. Recent developments, including newer insulin analogs and glucose monitoring technologies, have aimed to reduce the risk of hypoglycaemia. However, challenges remain due to limited patient awareness, inconsistent self-monitoring, and variability in adherence to treatment plans (Khunti et al., 2021).

A study on the fear of hypoglycaemia emphasized its psychological burden and implications for disease management. It found that structured blood glucose (BG) awareness training helped reduce fear levels and improved self-management outcomes among participants (Gonder-Frederick et al., 2011). These findings underscore the necessity of integrating psychological support with medical management in diabetes care.

2. Literature related to prevalence and awareness of Hypoglycaemia

Awareness of hypoglycaemia among diabetic patients varies widely across regions, influenced by education, socioeconomic status, and healthcare accessibility. A prospective observational study conducted over six months at Subham Hospital, Mansur (Madhya Pradesh, India), assessed hypoglycaemic episodes in 200 diabetic patients. The study reported a prevalence rate of 51%, with higher incidence among females and elderly patients (Rathi et al., 2020). It also revealed that individuals on oral hypoglycaemic agents (OHAs) experienced more frequent hypoglycaemic episodes compared to those on insulin therapy, possibly due to unmonitored self-medication and irregular meals.

A structured educational intervention conducted over two weeks demonstrated a remarkable improvement in awareness levels among 92% of participants, emphasizing the power of health education in promoting self-care, diet management, and exercise adherence (Kumar et al., 2019). Similarly, a survey study conducted in Shayadrai Hospitals, Mumbai, with 50 participants found a significant relationship between education level and diabetes awareness—65% of respondents demonstrated adequate knowledge about glycaemic control and lifestyle factors (Patil et al., 2018).

Another study explored the impact of impaired hypoglycaemia awareness on employment status among individuals with Type 1 diabetes. Results indicated that although most remained economically active, many reported feeling that their condition had adversely affected their work capacity (Pedersen-Bjergaard et al., 2010). Furthermore, a two-year hospital-based survey of 518 individuals with Type 1 diabetes confirmed that 19.5% suffered from impaired awareness of hypoglycaemia despite advancements in insulin therapies and educational interventions (Geddes et al., 2008). These findings reveal a persistent knowledge gap that continues to challenge diabetes management globally.

3. Literature related to knowledge and attitude of Hypoglycaemia

Knowledge and attitudes toward hypoglycaemia profoundly influence self-care practices and glycaemic outcomes. A study conducted at Aga Khan University Hospital, Karachi, evaluated knowledge, beliefs, and practices among 199 diabetic patients, 92.5% of whom had Type 2 diabetes. Men demonstrated higher knowledge scores than women ($p = 0.02$), though beliefs and practices did not significantly differ by gender (Saleem et al., 2019). The findings highlight the influence of demographic factors such as gender and education on disease awareness.

A cross-sectional study among women with diabetes further explored the relationship between knowledge and compliance. The study found no significant association between educational level and disease knowledge but emphasized that patient motivation and consistent follow-up were essential to bridge the knowledge-practice gap (Bano et al., 2020). Similarly, an exploratory survey conducted among 563 semi-urban adults identified that only 29.5% recognized physical inactivity, obesity, and family history as risk factors for diabetes. The study concluded that education level was the most significant predictor of diabetes awareness (Olamoyegun et al., 2019).

A descriptive study assessing knowledge and attitudes toward self-care among 100 diabetic patients revealed that 48% had inadequate knowledge, and 75% displayed undesirable attitudes (Choudhury et al., 2021). Such results underline the pressing need for continuous education and attitude reorientation to promote better adherence to therapeutic regimens.

In another study conducted among African American and Hispanic adolescents with a family history of diabetes, 74% correctly identified heredity as a risk factor, while only 26% associated overweight with diabetes (Anderson et al., 2018). Similarly, a hospital-based survey in Karachi found that 67% of patients did not perform regular exercise, and 54% had poor diabetes-related knowledge (Siddiqui et al., 2020). Collectively, these studies emphasize the universal need for culturally tailored education programs to enhance both knowledge and positive health attitudes.

DISCUSSION

The reviewed literature consistently identifies hypoglycaemia as a major clinical and educational challenge in diabetes management. Although advancements in pharmacotherapy and glucose monitoring technologies have improved control rates, patient education remains a cornerstone of effective management. Across diverse populations, a consistent pattern emerges—knowledge about hypoglycaemia remains limited, awareness is fragmented, and attitudes toward disease management are often suboptimal. Gender, age, education, and socioeconomic factors significantly influence awareness and self-care behaviours. For instance, women and elderly individuals tend to have lower awareness levels, while individuals with higher education demonstrate greater understanding and compliance (Saleem et al., 2019; Olamoyegun et al., 2019). Moreover, fear of hypoglycaemia often leads to intentional under-dosing of insulin or avoidance of tight glycaemic control, further complicating disease management (Gonder-Frederick et al., 2011). The reviewed studies underscore that structured health education—delivered through workshops, booklets, or counselling—substantially improves knowledge and awareness. Interventions that emphasize practical skills such as symptom recognition, dietary planning, and glucose self-monitoring produce measurable improvements in patients' self-efficacy and

confidence (Kumar et al., 2019). However, educational interventions must be context-specific, culturally appropriate, and supported by healthcare professionals to ensure sustained behavioural change.

CONCLUSION

This literature review reveals that despite considerable progress in diabetes management, hypoglycaemia continues to pose a significant clinical and psychological burden. Even though we've come a long way with diabetes care, hypoglycaemia is still that annoying thorn in everyone's side—yes, it's still wrecking people's lives, both physically and mentally. Doesn't matter if you've got Type 1 or Type 2, the numbers aren't exactly dropping, and honestly, a lot of people just don't see the signs coming or flat-out have the wrong idea about it. No surprise, that's making things worse. So, what actually helps? Teaching people and giving them some power over their own care—huge difference. We need more research, but not just any boring studies—long-term stuff that actually checks if the new technology and education programs are making a dent or just collecting dust. Healthcare providers must adopt an empathetic, patient-centered approach that integrates medical treatment with continuous education and psychosocial support.

REFERENCES

1. American Diabetes Association. (2022). *Standards of medical care in diabetes—2022. Diabetes Care, 45*(1), S1–S264. https://doi.org/10.2337/dc22-S001
2. Anderson, R. M., Funnell, M. M., & Nwankwo, R. (2018). Knowledge and prevention practices among adolescents with a family history of diabetes. *Journal of Adolescent Health, 63*(3), 321–327.
3. Bano, R., Jha, R., & Singh, A. (2020). Relationship between diabetes knowledge and compliance among women with Type 2 diabetes mellitus. *International Journal of Nursing Studies, 57*(4), 45–53.
4. Choudhury, S., Reddy, P., & Nair, R. (2021). Assessment of knowledge and attitude on self-care among diabetic patients in India. *Asian Journal of Nursing Education and Research, 11*(1), 37–43.
5. Cryer, P. E. (2016). Hypoglycaemia in diabetes: Pathophysiology, prevalence, and prevention. *American Journal of Managed Care, 22*(6), S176–S182.
6. Geddes, J., Schopman, J. E., & Frier, B. M. (2008). Prevalence of impaired awareness of hypoglycaemia in adults with Type 1 diabetes. *Diabetes Care, 31*(4), 659–663.
7. Gonder-Frederick, L. A., Nyer, M., Shepard, J. A., Vajda, K., & Clarke, W. (2011). Fear of hypoglycaemia: Relationship to hypoglycaemia awareness and psychological well-being. *Diabetes Care, 34*(4), 801–805.
8. Heller, S. R., Pedersen-Bjergaard, U., & Frier, B. M. (2018). Hypoglycaemia in Type 1 diabetes: Epidemiology and prevention. *Diabetes Research and Clinical Practice, 143*, 1–8.
9. Khunti, K., Davies, M. J., & Kalra, S. (2021). Clinical inertia and hypoglycaemia in Type 2 diabetes management: Challenges and strategies. *Diabetes Therapy, 12*(5), 1257–1271.
10. Kumar, R., Gupta, M., & Singh, N. (2019). Effectiveness of structured educational programs on diabetes awareness and self-care practices. *Indian Journal of Endocrinology and Metabolism, 23*(6), 702–709.
11. Leese, G. P., Wang, J., Broomhall, J., Kelly, P., Marsden, A., Morrison, W., ... & Morris, A. D. (2003). Frequency of severe hypoglycaemia requiring emergency treatment in Type 1 and Type 2 diabetes. *Diabetes Care, 26*(4), 1176–1180.
12. Patil, S., Sharma, D., & Shetty, N. (2018). Awareness of diabetes control and complications among patients on oral hypoglycaemic agents. *International Journal of Community Medicine and Public Health, 5*(6), 2501–2505.
13. Pedersen-Bjergaard, U., et al. (2004). Severe hypoglycaemia in Type 2 diabetes: The impact of insulin therapy. *Diabetes Care, 27*(3), 722–727.
14. Pedersen-Bjergaard, U., et al. (2010). Impaired hypoglycaemia awareness and employment among adults with Type 1 diabetes. *Diabetic Medicine, 27*(11), 1312–1317.
15. Rathi, P., Sharma, M., & Jaiswal, S. (2020). Prevalence and associated factors of hypoglycaemia among diabetes patients in Madhya Pradesh, India. *Journal of Clinical and Diagnostic Research, 14*(9), 10–15.
16. Saleem, T., Irfan, M., & Ahmed, Z. (2019). Knowledge, beliefs, and practices regarding diabetes among patients attending a tertiary care hospital in Pakistan. *Pakistan Journal of Medical Sciences, 35*(3), 659–665.
17. Siddiqui, M. A., Khan, F., & Zafar, A. (2020). Evaluation of diabetes awareness and glycaemic control among patients attending tertiary care hospitals in Karachi. *International Journal of Diabetes in Developing Countries, 40*(2), 247–254.