Published in final edited form as:

Evid Based Nurs. 2011 January ; 14(1): 5–6. doi:10.1136/ebn.14.1.5.

Hypoglycaemic-related Fear in Parents of Children with Poor Glycaemic Control of their Type 1 Diabetes is Associated with Poorer Glycaemic Control in their Child and Parental Emotional Distress

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Hypoglycemia is a common complication of type 1 diabetes treatment (1). It is typically the result of incorrect matching of insulin to carbohydrate intake and/or mismanagement of insulin when exercising. Symptoms of mild hypoglycemia can include confusion, faintness, irritability, trembling, and nausea. However, in cases of moderate to severe hypoglycemia, low blood glucose levels can sometimes lead to seizures, coma, or even death. The availability of new analog insulin and improvements in intensive therapy have decreased the rate of severe hypoglycemia in patients with type 1 diabetes (1). However, because the symptoms of hypoglycemia are uncomfortable and potentially dangerous, fear of hypoglycemia remains a widespread problem among youth with type 1 diabetes and their families.

In a population-based study, Haugstvedt and colleagues report on fear of hypoglycemia in parents of youth with type 1 diabetes and whether fear of hypoglycemia is associated with diabetes treatment factors and parental emotional distress. The parents of 115 youth with type 1 diabetes participated in this study. Parents completed Norwegian versions of the Hypoglycemia Fear Survey-Parent (HFS-P) and the Hopkins Symptom Checklist-25 (HSCL-25). Information specific to youths' diabetes treatment were reported by parents via questionnaire. To estimate glycemic control, glycated hemoglobin values (HbA1c) obtained nearest to the date of survey distribution were extracted from youths' medical chart. The results demonstrated associations between higher Worry scores on the HFS-P and higher HbA1c values and parent-reported frequency of hypoglycemia among youth. Examining the HFS-P Behavior subscale, higher scores were found for youth on insulin injections and youth who checked blood glucose 7 or more times daily. Overall, mothers reported higher HFS-P scores than fathers. However, when examining parental emotional distress, there was a direct association between HFS-P and HSCL-25 scores for both mothers and fathers.

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Competing interests: None

The study methodology is largely sound. The authors recruited a large sample of youth on intensive therapy, which is important as the risk of hypoglycemia may be higher for youth on older conventional regimens (1). The study used validated measures to examine fear of hypoglycemia and emotional distress. However, there are some limitations. First, the patient sample was very homogenous and thus the results may not generalize to more diverse samples. Second, most of the outcome measures were measured via self-report, which may introduce a response bias. A more objective report of frequency and severity of hypoglycemia and youths' daily blood glucose monitoring may have been extracted from youths' medical record. Finally, variation in the timing of when HbA1c values were collected may have introduced some bias. Collecting all HbA1c values ahead of study enrollment would have minimized any impact study participation could have had on parents' daily diabetes management and youths' subsequent HbA1c.

With respect to clinical practice, the results suggest that physicians and nurses should assess for fear of hypoglycemia in parents of youth who have experienced hypoglycemic events as well as youth with higher average blood glucose levels. While caution is clearly needed to avoid episodes of hypoglycemia, parents who are overly afraid could make daily treatment decisions that lead to higher than optimal blood glucose levels in youth. Thus, another important implication is the need to teach parents and youth appropriate self-management strategies to prevent hypoglycemia.

Although interesting, the results of this study are not truly novel. Past studies have demonstrated associations between parental fear of hypoglycemia and youths' blood glucose levels and hypoglycemia frequency (2–4). Parental fear of hypoglycemia has been related to parenting stress and anxiety (5, 6). Moreover, a comparison of HFS-P scores for mothers and fathers has been previously reported (3). Haugstvedt et al. report findings for parental fear of hypoglycemia that are consistent with the existing literature. Going forward, researchers should focus on the development of evidence-based intervention materials for parents of youth with type 1 diabetes.

References

1. Clarke W, Jones T, Rewers A, Dunger D, Klingensmith G. Assessment and management of hypoglycemia in children and adolescents with diabetes. *Pediatr Diabetes*. 2009; 10:134–145. [PubMed: 19754624]
2. Patton SR, Dolan LM, Henry R, Powers SW. Parental fear of hypoglycemia: young children treated with continuous subcutaneous insulin infusion. *Pediatr Diabetes*. 2007 Dec; 8(6):362–368. [PubMed: 18036061]
3. Patton SR, Dolan LM, Henry R, Powers SW. Fear of hypoglycemia in parents of young children with type 1 diabetes mellitus. *J Clin Psychol Med Settings*. 2008 Sep; 15(3):252–259. [PubMed: 19104970]
4. Clarke WL, Gonder-Frederick A, Snyder AL, Cox DJ. Maternal fear of hypoglycemia in their children with insulin dependent diabetes mellitus. *J Pediatr Endocrinol Metab*. 1998 Mar; 11(Suppl 1):189–194. [PubMed: 9642659]
5. Streisand R, Swift E, Wickmark T, Chen R, Holmes C. Pediatric parenting stress among parents of children with type 1 diabetes: the role of self-efficacy, responsibility, and fear. *J Pediatr Psychol*. 2005; 30:287–291. [PubMed: 15784924]

6. Gonder-Frederick LA, Fisher CD, Ritterband LM, Cox DJ, Hou L, DasGupta AA, et al. Predictors of fear of hypoglycemia in adolescents with type 1 diabetes and their parents. *Pediatr Diabetes*. 2006 Aug; 7(4):215–222. [PubMed: 16911009]

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