

The impact of a diabetes education training workshop on school teachers' knowledge and confidence, of managing children with Type 1 Diabetes in South Wales:

A Service Evaluation study



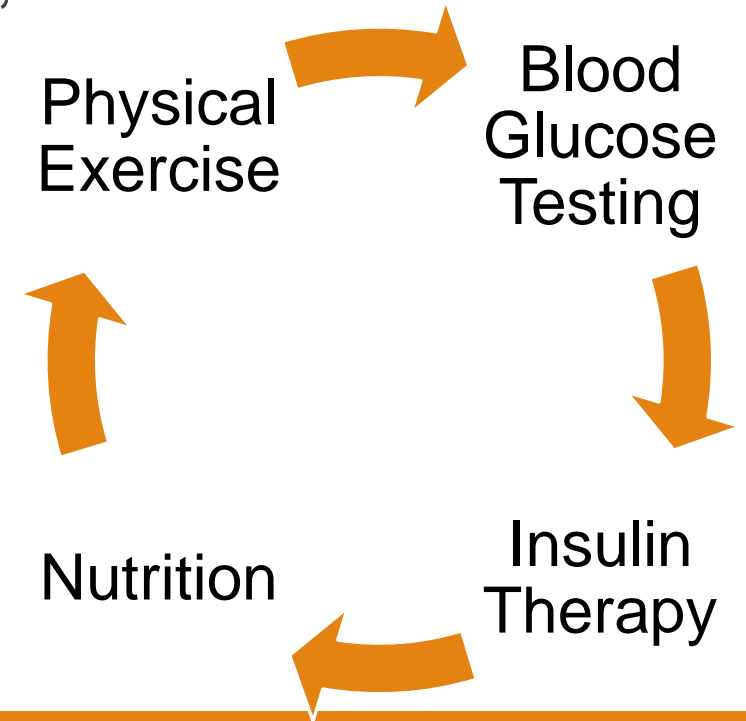
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Background

- The management of Type 1 diabetes is a complex process requiring a delicate balance between four key factors¹;



Background

- Type 1 diabetes is one of the most common chronic diseases prevalent in school children².

→ School setting

- Poor knowledge exists among teachers in the management of diabetes in children³⁻⁹.
- Diabetes education workshops improve the knowledge¹⁰⁻¹² and confidence of school teachers in diabetes management¹²⁻¹³.

Aim of this study

1. To evaluate the impact of the ABUHB diabetes education workshop on the knowledge and confidence levels of teachers in diabetes management of school children.
2. To explore participants' opinions on the workshop content and structure.



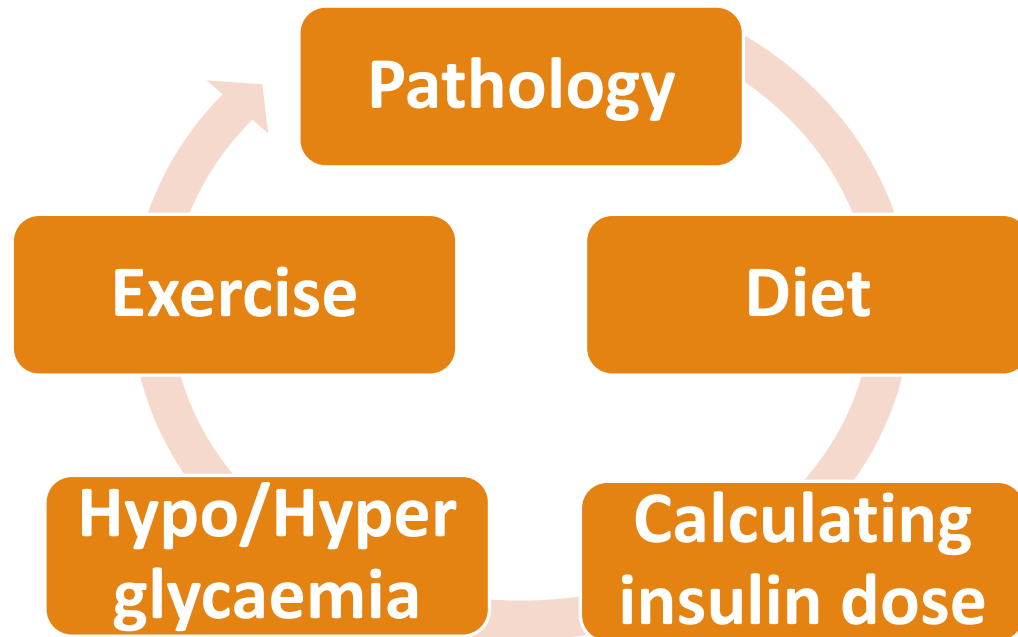
Diabetes workshop

- Central location in south Wales
- 3 hours duration, once per month
- 8-12 participants
- 2 x Paediatric diabetes specialist nurses
- 1 x Paediatric diabetes specialist dietitian/dietetic support worker.

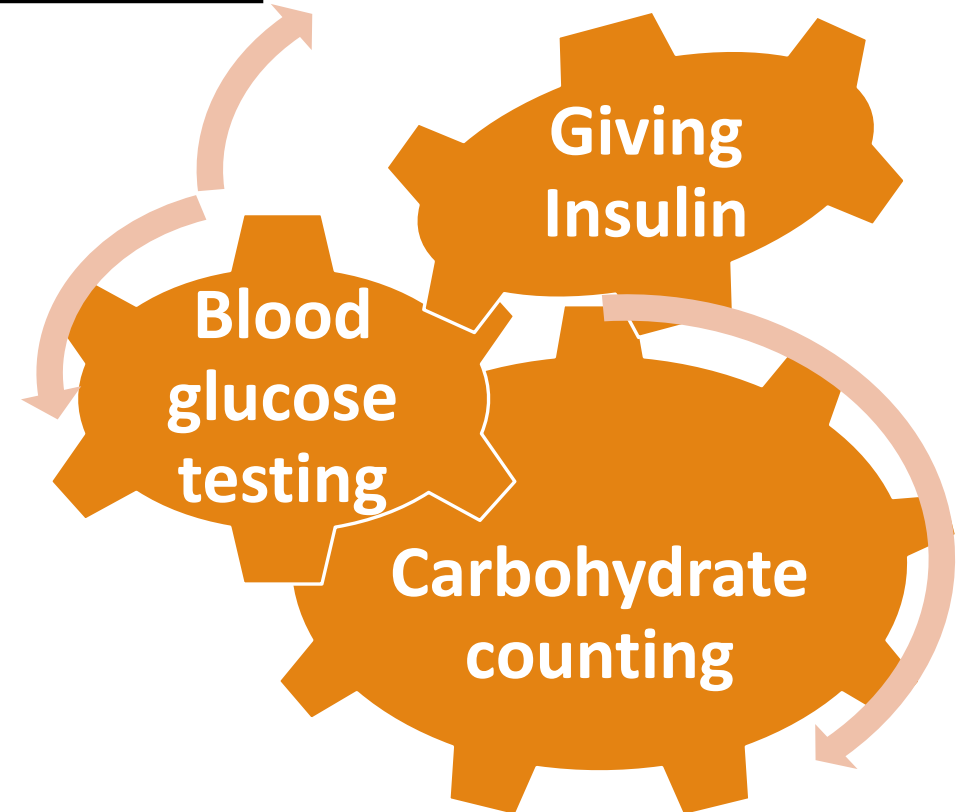


Diabetes workshop

THEORY



PRACTICAL



Methods



- ❑ A two-phased mixed methods service evaluation
 - *Quantitative*
 - *Qualitative*
- ❑ October 2018 – March 2019
- ❑ Non-Probability Convenience sampling
- ❑ 38 participants

Methods

QUANTITATIVE

Questionnaire

- ✓ 15 x multiple choice knowledge questions
- ✓ 6 x confidence scale questions
- ✓ 3 open questions
- ✓ Baseline and immediately post-workshop

QUALITATIVE

Focus groups

- ✓ 3 x groups
- ✓ Post workshop (23 participants)

Results

PARTICIPANT CONCERNS

- ❖ Lack of knowledge in diabetes
- ❖ Anxiety/apprehension
- ❖ Hypoglycaemia management

Comments

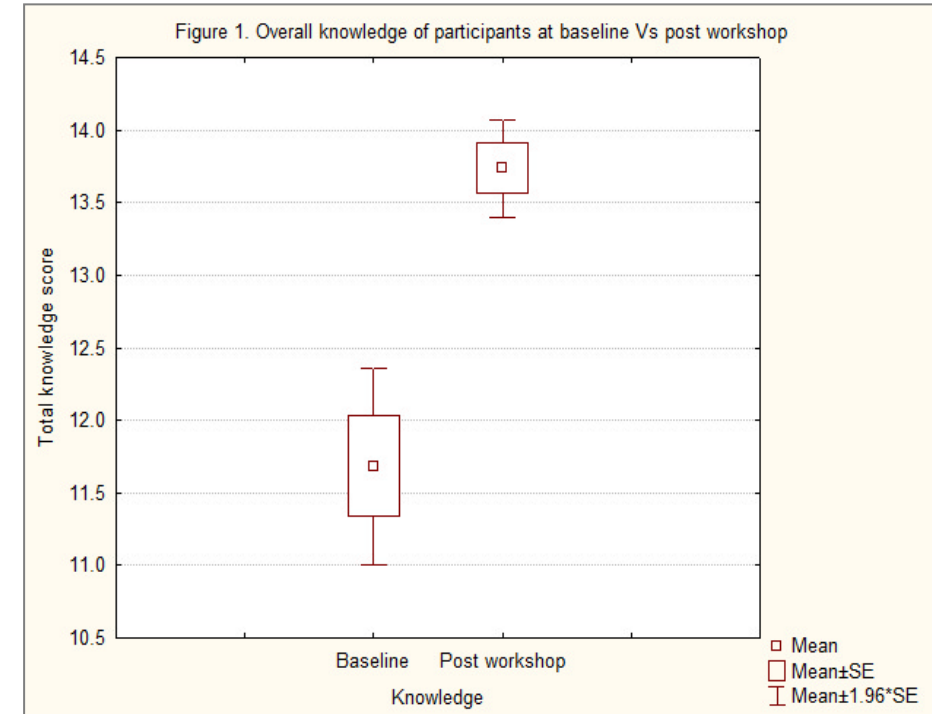
(P2) *“I want to know I am equipped with the correct knowledge to help children in these cases (hypoglycaemia)”*

(P24) *“I am not confident that if they (the children) go hypo I will be able to help because I haven’t had to do it before”*

Results

KNOWLEDGE

- Overall knowledge improved significantly
 - 11.7 → 13.7 correct answers post workshop (*total 15 questions*)
- Improvements found across all knowledge questions
- Nine questions → statistically significant improvement



($p < 0.05$ = statistically significant)

Results

KNOWLEDGE → HYPOGLYCAEMIA MANAGEMENT

Poor knowledge remained post workshop:

- **50%** did not identify all causes of hypoglycaemia → *physical activity*
- **66%** did not correctly identify suitable treatment options → *chocolate, sandwich*

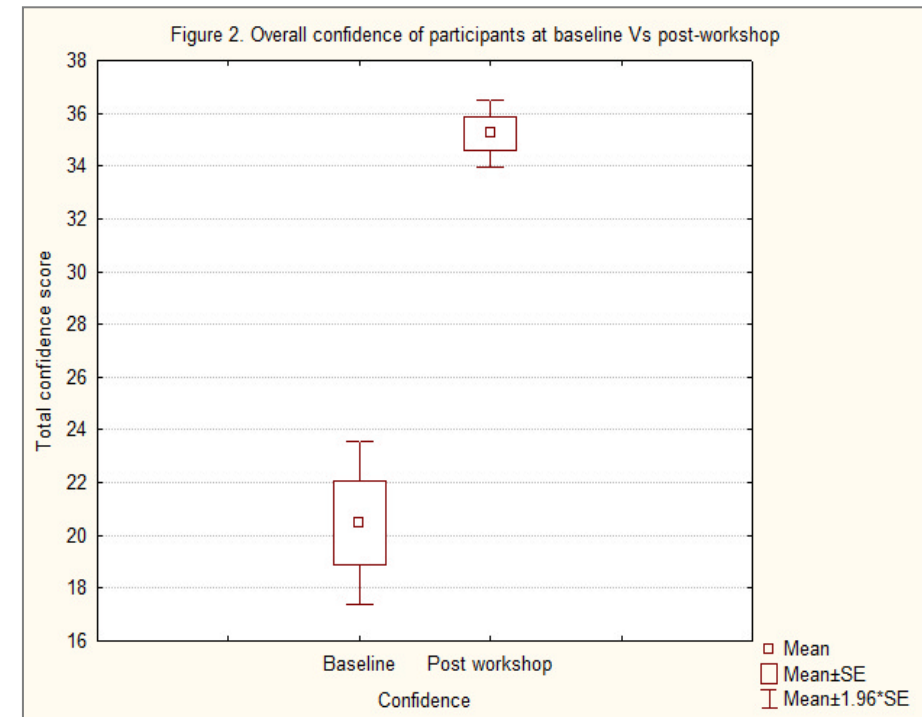
Results

CONFIDENCE

Overall confidence improved significantly ($p < 0.05$)

- 20.5 → 35.2 points scored (*total 42 points*)

Each confidence question significantly improved



($p < 0.05$ = statistically significant)

Results

CONFIDENCE

Comments

(P1) “I feel more confident in my ability to manage diabetes having attended today”

(P6) “I have an increased self-confidence in managing the child’s needs”.

Results

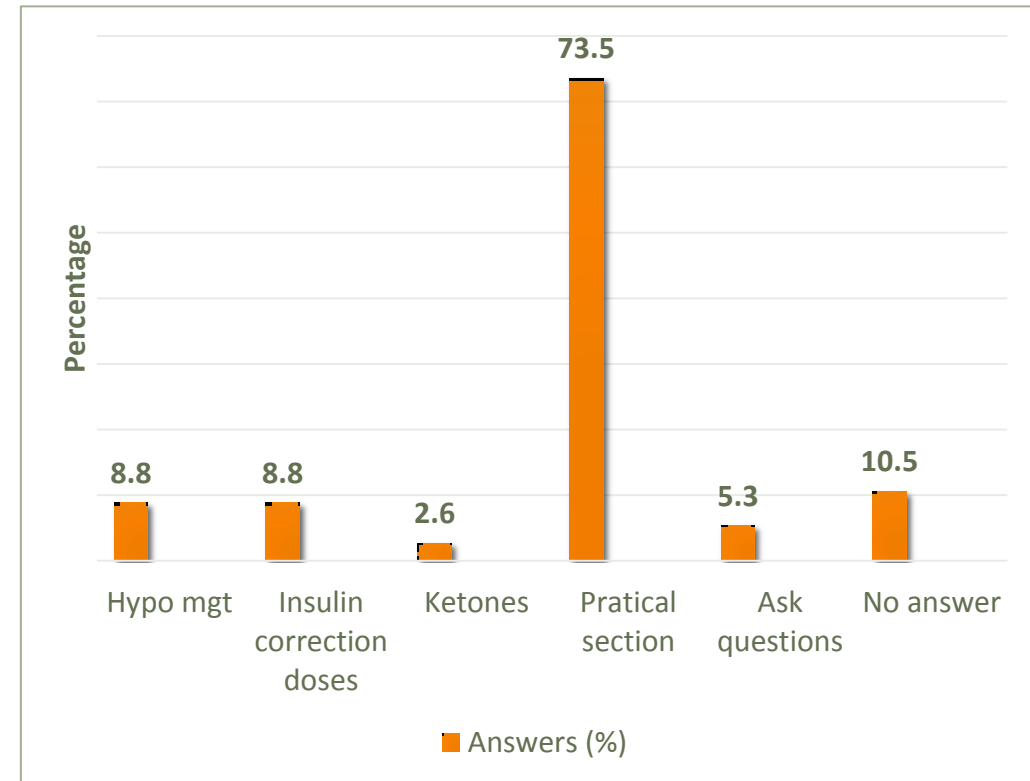
WHAT DID YOU FIND MOST USEFUL ABOUT THE WORKSHOP?

- Practical section - 73.5% (n=34)

Comments

(P5) *“I really valued being able to practice in front of trained professionals...”*

(P12) *“Having scenarios we needed to work out really helped”*



Results

IMPROVEMENT SUGGESTIONS

- Creation of a “HOW-TO GUIDE”

Comments

(P17) a crib-sheet” would be useful.... outlining the methods step by step”

(P19) “A step-by-step back to confirm we are doing things right”

Limitations

**Small sample
size**

**Unknown
longevity**

**Social
desirability
bias**

**Interviewer
bias**



Conclusion

- ❖ ABUHB diabetes education workshop **is successful** in improving the knowledge and confidence of teachers in the diabetes management of school children.
- ❖ First study to use this method
- ❖ Positive feedback received → ***structure*** of the workshop.



Improvements made following this study

Hypoglycaemia management

- Initial group discussion
- Assess participant's current understanding of hypoglycaemia
- Lesson plan updated

Instruction guides

- Carbohydrate counting
- Giving insulin via pump/pens
- Testing blood glucose levels

Thanks you for
listening.

Any questions?



References

1. NICE (2015) *Diabetes (type 1 and type 2) in children and young people: diagnosis and management* [online] Available at: <https://www.nice.org.uk/guidance/ng18/resources/diabetes-type-1-and-type-2-in-children-and-young-people-diagnosis-and-management-pdf-1837278149317> [Accessed 3 Nov 2018]
2. Siminerio LM, Albanese-O'Neill A, Chiang JL, Hathaway K, Jackson CC, Weissberg-Benchell J, et al (2014). Care of young children with diabetes in the child care setting: a position statement of the American Diabetes Association. *Diabetes Care*;37(10):2834–42
3. Bradbury AJ, and Smith CS. (1983) An assessment of the diabetic knowledge of school teachers. *Archives of Disease in Childhood*;58:692-6.
4. Gormanous, M., Hunt, A., Pope, J. and Gerald, B., (2002). Lack of knowledge of diabetes among Arkansas public elementary teachers: implications for dietitians. *Journal of the Academy of Nutrition and Dietetics*, 102(8), p.1136
5. Jacquez, F., Stout, S., Alvarez-Salvat, R., Fernandez, M., Villa, M., Sanchez, J., ... & Delamater, A. (2008). Parent perspectives of diabetes management in schools. *The Diabetes Educator*, 34(6), 996-1003.
6. Pinelli, L., Zaffani, S., Cappa, M., Carboniero, V., Cerutti, F., Cherubini, V., Chiarelli, F., Colombini, M.I., La Loggia, A., Pisanti, P. and Vanelli, M., (2011). The ALBA project: an evaluation of needs, management, fears of Italian young patients with type 1 diabetes in a school setting and an evaluation of parents' and teachers' perceptions. *Pediatric diabetes*, 12(5), pp.485-493.
7. Ayca, Z., Önder, A., Çetinkaya, S., Bilgili, H., Yıldırım, N., Baş, V.N., Kendirci, H.N.P. and Ağladioğlu, S.Y., (2012). Assessment of the knowledge of diabetes mellitus among school teachers within the scope of the managing diabetes at school program. *Journal of clinical research in pediatric endocrinology*, 4(4), p.199
8. Särnblad, S., Berg, L., Detlofsson, I., Jönsson, Å., & Forsander, G. (2014). Diabetes management in Swedish schools: a national survey of attitudes of parents, children, and diabetes teams. *Pediatric diabetes*, 15(8), 550-556
9. Diabetes UK (2016b) *Type 1 diabetes in schools in Wales - "An Excellent Chance"* [online] Available at: <https://diabetes-resources-production.s3-eu-west-1.amazonaws.com/diabetes-storage/migration/pdf/Type%25201%2520diabetes%2520in%2520schools%2520in%2520Wales%2520-%2520An%2520Excellent%2520Chance.public.pdf> [Accessed 24 Nov 2018].
10. Taha, N.A., Rahme, Z., Mesbah, N., Mahmoud, F., AlKandari, S., Othman, N., Sharaikha, H., Lari, B.S., AlBeloushi, S., Saad, E. and Arefanian, H., (2018). Evaluation of the impact of a diabetes education eLearning program for school personnel on diabetes knowledge, knowledge retention and confidence in caring for students with diabetes. *Diabetes research and clinical practice*, 139, pp.348-356
11. Siminerio, L.M. and Koerbel, G., (2000). A diabetes education program for school personnel. *Practical Diabetes International*, 17(6), pp.174-177
12. Smith, C.T., Chen, A.M., Plake, K.S. and Nash, C.L., (2012). Evaluation of the impact of a diabetes education curriculum for school personnel on disease knowledge and confidence in caring for students. *Journal of School Health*, 82(10), pp.449-456.
13. Husband, A., Pacaud, D., Grebenc, K. and McKiel, E., (2000). The effectiveness of a CD-rom in educating teachers who have a student with diabetes. *Diabetes Research and Clinical Practice*, 50, p.416