Treatment of Mycoplasma genitalium with azithromycin 1g is associated with the development of macrolide antimicrobial resistance

Horner P1,2, Ingle SM1, Garrett F2, Blee K3, Kong FYS4, Muir P5, Moi H6

1The National Institute for Health Research Health Protection Research Unit in Evaluation of Interventions at University of Bristol, School of Community Medicine, University of Bristol, United Kingdom. 2Bristol Sexual Health Centre, University Hospitals Bristol NHS Trust, Bristol, United Kingdom. 3Centre for Epidemiology and Biostatistics, University of Melbourne, Australia. 4Public Health Laboratory Bristol, National Infection Service, Public Health England, Myrtle Road, Bristol, UK. 5Olafia Clinic, Oslo University Hospital, Institute of Medicine, University of Oslo, Norway.

Introduction

- Mycoplasma genitalium (MG), an important STI, has demonstrated a remarkable capability to develop antimicrobial resistance.
- MG can cause non-gonococcal urethritis (NGU) and cervicitis among other things.
- First-line treatment for NGU/cervicitis is either a 7-day course of doxycycline or with a single 1g dose of azithromycin.
- However, failure rates with doxycycline are high, and are increasing for azithromycin. This may be due to the emergence of macrolide antimicrobial resistance.1
- An extended regimen of azithromycin 500 mgs on day one then 250mgs daily for 4 days (5 day regimen) was introduced in the 1990s for treatment of MG.
- The 5 day regimen has high efficacy rates (if no pre-existing macrolide resistance) and is less associated with induction of macrolide resistance.
- There are no comparative trials of the two regimens.

We undertook a review of MG treatment studies using single 1g and 1.5g over 5 day regimens of azithromycin to determine rates of treatment failure and resistance in both regimens.

Methods

- Medline was searched using terms “Mycoplasma genitalium”, “macrolide” or “azithromycin” and “resistance” up to August 2015.
- Studies were eligible if they:
  - used azithromycin 1g or 5 days,
  - assessed patients for macrolide resistant genetic mutations prior to treatment,
  - and again resistance genotyped patients who failed.
- For each study we derived the number of patients treated with the 1g or 5 day regimen, and the numbers who failed treatment or were found to have developed resistance.
- Using these raw numbers, we crudely estimated the proportion of failures and proportion who developed resistance for each regimen.
- To account for between study heterogeneity, we used random effects meta-analysis to estimate failure and resistance rates on each regimen.

Results

- Seven studies were identified totaling 476 patients of whom 123 (25.8%) had received the 5 day regimen.
- All studies included data on the 1g regimen, but only 2 studies had also assessed the 5 day regimen, see the Table below.

Table: Description of studies with details of treatment outcomes

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Study type</th>
<th>Year of publication</th>
<th>Sample size</th>
<th>Treated with 5 day regimen</th>
<th>Number treated with 1g regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anagrius3</td>
<td>Swedish STD clinic. Men and women.</td>
<td>Retrospective case study</td>
<td>2013</td>
<td>191</td>
<td>Total: 114; Failure: 7; Resistance: 0</td>
<td>114*  7(6.1%)  0(0.0%)</td>
</tr>
<tr>
<td>Tal's</td>
<td>Swedish STD clinics. Men and women.</td>
<td>Observational</td>
<td>2015</td>
<td>36</td>
<td>3 (6.5%)  3 (6.5%)  10 (10.0%)  1 (10.0%)</td>
<td>10 (10.0%)</td>
</tr>
<tr>
<td>Twin's</td>
<td>Melbourne Sexual Health Centre. Men and women.</td>
<td>Observational</td>
<td>2012</td>
<td>66</td>
<td>12 (18.1%)  1 (1.5%)  66 (100%)  14 (21.2%)</td>
<td>14 (21.2%)</td>
</tr>
<tr>
<td>Cooladwell</td>
<td>Western Sydney Sexual Health Centre. Men and women.</td>
<td>Observational</td>
<td>2013</td>
<td>12</td>
<td>12 (100%)  4 (33.3%)  3 (25%)</td>
<td>3 (25%)</td>
</tr>
<tr>
<td>Walker</td>
<td>Australian primary care clinics. Women only.</td>
<td>Observational</td>
<td>2013</td>
<td>28</td>
<td>28 (100%)  3 (10.7%)  28 (100%)  5 (17.8%)</td>
<td>5 (17.8%)</td>
</tr>
<tr>
<td>Bisessore</td>
<td>Melbourne Sexual Health Centre. Men and women.</td>
<td>Prospective cohort study</td>
<td>2014</td>
<td>99</td>
<td>99 (100%)  11 (11.1%)  99 (100%)  11 (11.1%)</td>
<td>11 (11.1%)</td>
</tr>
<tr>
<td>Ito's</td>
<td>Urologic clinic in Sendai, Japan. Men only.</td>
<td>Observational</td>
<td>2011</td>
<td>24</td>
<td>24 (100%)  7 (29.2%)  4 (16.7%)</td>
<td>4 (16.7%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>476</td>
<td>125 (26.2%)  3 (2.4%)  12 (2.4%)  353 (74.1%)</td>
<td>353 (74.1%)</td>
</tr>
</tbody>
</table>

* 3 additional men of 117 excluded as no information on antimicrobial resistance prior to treatment in 2 and no information prior to and after treatment in one man i.e. failure rate 8.5% (10/117).

![Figure 1: Forest plot showing antimicrobial treatment failure with azithromycin 1g](image1)

![Figure 2: Forest plot showing antimicrobial resistance development with azithromycin 1g](image2)

Conclusions

- Crude estimates showed that 13.3% failed treatment with azithromycin 1g and 12.2% developed macrolide antimicrobial resistance. These were similar to the random effect estimates.
- Crude estimates also showed that 2.4% failed treatment with the 5 day regimen and 2.4% developed macrolide antimicrobial resistance, although this is based on small numbers.
- The limited evidence available suggests the 5 day regimen may be more effective and less likely to cause macrolide resistance.

Acknowledgement

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References

Can community pharmacy be effective in increasing uptake of the seasonal influenza vaccine? A review of the evidence base.

Amy McCullough, Public Health Specialty Registrar and Dr Ardiana Gjini, Consultant in Public Health Medicine

Bath, Gloucestershire, Swindon and Wiltshire, NHS England / PHE South West Centre

BACKGROUND

A number of localities across England have implemented community pharmacy influenza immunisation services to increase uptake, and this has been supported by Department of Health and NHS England guidance.

Nevertheless, it is unclear whether there is evidence that supports community pharmacy delivery of flu vaccines. In order to ensure that the team for Bath Gloucestershire Swindon and Wiltshire (BGSW) NHS England made a robust decision on whether to commission such a service, it was important to review the evidence.

METHODS

A literature search of PUBMED, Embase and online libraries was carried out to identify relevant peer-reviewed studies. Grey literature was identified using Google search engine and snow-balling methods.

All of the included peer-reviewed studies were assessed and graded for their quality using GRADE (Grading of Recommendations, Assessment, Development and Evaluations).

RESULTS

After reviewing the titles and abstracts of 215 potentially relevant peer-reviewed studies, 14 were included in the review. 10 reports from the grey literature were also identified for inclusion.

Quality of the evidence base:

Overall the majority of evidence does not come from high quality studies (93%).

However high quality studies are difficult to conduct in this context, and public health practice on interventions to improve uptake of programmes often is dependent on evidence from medium-low quality studies.

- Approximately 70% of the (peer reviewed) evidence is from outside the UK.
- Publication bias needs to be considered.
- No peer reviewed studies assessing the cost effectiveness of community pharmacy delivery of flu immunisations met the assessment criteria.

The evidence base is consistent in its findings in relation to several outcomes; including an increase in overall uptake.

- 4 studies show an increase in overall uptake of between 8 and 10% (including one UK peer reviewed study); 1 study shows a more conservative increase; up to 2%.
- 4 peer reviewed studies and 2 reports from the grey literature report the proportion of "new" patients (not previously vaccinated) is 8-11%.
- Most people vaccinated are aged over 65 years (though more under 65 years are vaccinated when looking at extended opening hours only).
- Access is a key reason for choosing community pharmacy above general practice.
- High levels of patient satisfaction reported.
- Plausibly limited additional costs (suggested by the grey literature).

ACKNOWLEDGEMENTS

Many thanks to Chris Philips and Filiz Altinoluk-Davis both NHS England, and library services staff at the Royal United Hospital NHS Foundation Trust.

REFERENCES

1. Grading of Recommendations, Assessment, Development and Evaluations (GRADE) Working Group, see http://www.gradeworkinggroup.org/

CONCLUSIONS

After weighing up….

1. Quality, and what is reasonable to expect; and
2. Consistency of the findings…

The evidence base weights in support of community pharmacies (in support of general practice) increasing overall uptake. Success however, is dependent on how well the service is commissioned and delivered. The focus should be on increasing uptake in those that have not been previously vaccinated, not just widening choice.

RECOMMENDATIONS

- The aim of service should be to increase uptake in those that have not been previously vaccinated (either in the previous year or ever).
- Review of local uptake and need should inform which groups to target.
- Learn from pilots and existing commissioned services to better understand the critical delivery interventions, costs and payment mechanisms.
Descriptive Analysis of Liver Transplants for Patients in the South West

James Westwood, Mark Dancox, Liz Rolfe
Local Knowledge and Intelligence Service (South West), Public Health England

INTRODUCTION
Mortality with an underlying cause of liver disease has been increasing in England, rising by 40% from 2001 to 2012. This is in contrast with most EU countries where mortality from liver disease has been falling. In response to this, PHE has developed a national intelligence work programme to better understand the landscape of liver disease in England.

An outline of the underlying reasons for liver transplants was provided in ‘Liver Disease in the South West: A Health Needs Assessment’.

This descriptive analysis aims to provide further detail on this important aspect of treatment for liver disease.

METHODS
A descriptive analysis was undertaken of the patterns seen in the provision of liver transplants between 2010 and 2015 (financial years, April – March) for residents in the South West of England.

There were 253 transplant patients during the period. Some outcome measures are based on time periods of 3 months and 1 year post-transplant. These time periods had not elapsed for all patients at time of reporting, the outcome percentages are based on cohorts of 246 and 203 patients respectively. Closest facility analysis within ArcGIS was used to calculate distances for each patient to the transplant centre they attended.

Factors explored in the full report will be: Reasons for transplant (primary and secondary diagnoses) Demographic characteristics (Gender, age, ethnicity) Waiting times and length of stay (and variation by transplant centre) Outcomes post-transplant (lifestyle scores pre- and post-transplant, readmissions)

CONCLUSIONS
The main reasons for liver transplants appear to be following the trend in diagnosis that we see in other liver indicators such as mortality and hospital data. Liver transplants are overwhelmingly successful when the post-transplant outcomes are looked at, especially when compared to those with advanced liver disease who are not transplanted.

ACKNOWLEDGEMENTS
Thanks to the NHS Blood and Transplant team, particularly Stephen Hope and Rachel Johnson for data provision and answering repeated queries.
Professor Julia Verne and Dr. Ben Hudson for offering expert advice and clinical insight where there was none.

DISCUSSION
The geographical analysis by local authority raises some important issues concerning access to transplants for those with liver disease. Why are so few liver patients in Bristol receiving transplants when both rates of liver mortality and hospitalizations are high?

Studying data on those assessed for transplant, as well as those receiving transplants, may add further insights to the issues surrounding access for patients across the South West.

The outcomes data could be further explored alongside the reasons for transplants and other patient characteristics to identify those with poorer outcomes.

RESULTS

Crude rates of transplants were highest in Plymouth, Bath & North East Somerset and Torbay (1.63, 1.57 and 1.52 per 100,000 population respectively)

The lowest rates were seen in Bristol and Wiltshire (0.05 and 0.75 per 100,000 population respectively)

The rate for the South West (excluding Dorset, Bournemouth and Poole) was 1.06 per 100,000 population

Crude rates of transplants were highest in those aged 45+ and the very young (0-4). Over 70% of transplants were for those aged 45+

Median distance: 138 miles

POST-TRANSPLANT OUTCOMES

Intraoperative deaths were very rare <1%

Less than 15% of patients had treated rejection episodes at three months

After 1 year: 50% of transplanted had no readmission

Where a readmission was required they ranged from 1 to a maximum of 10.

Lifestyle activity scores post transplant were also good with 69% of patients having no restrictions (or restriction only on strenuous physical activity)
A cluster RCT of an intervention to improve the mental health support and training available to secondary school teachers
Kidger J, Gunnell D, Campbell R, Tilling K, Hollingworth W, University of Bristol; Murphy S, Evans R, Cardiff University; Ford T, University of Exeter; Araya R, LSHTM

BACKGROUND
- Teachers are at elevated risk of psychological distress compared to the general working population.
- Poor mental health may impair teachers’ ability to develop positive relationships with students, which can be detrimental to student emotional health.
- Poor mental health may lead to sickness absence or poor performance, with negative impacts on student learning.
- Teachers report feeling unsupported themselves, and ill-equipped to support student mental health.

FINDINGS FROM THE PILOT STUDY
- Schools will take part in such a study: 6 schools participated. 438 staff and 1,862 students had baseline and follow up data.
- MHFA training is perceived to be relevant by schools, and leads to improved knowledge, less stigmatising attitudes, confidence in helping colleagues and students, and greater frequency in helping colleagues and students.
- Training for teachers needs to be one day rather than two, and have a greater focus on skills and ideas to help students.
- A staff peer support service can help individuals by providing a confidential listening ear, offering advocacy in work related problems and signposting to longer term specialist help.
- The peer support service works best if i) Senior Leaders champion it but are not supporters themselves ii) all staff know at least one of the peer supporters iii) staff have a choice of who they approach for help iv) the service is regularly advertised to staff and relaunched every academic year v) peer supporters support each other through a buddy system.
- Participation in WISE can raise the profile of staff mental health at a school-wide level.

OVERALL STUDY AIM
To evaluate the effectiveness and cost effectiveness of an intervention that provides peer support for secondary school teachers, and teacher training in mental health first aid, using a cluster RCT design with embedded process and economic evaluations.

THE INTERVENTION
- 8% staff receive 2 days training in Mental Health First Aid (MHFA; http://www.mhfaengland.org) and then provide a confidential peer support service to colleagues.
- 8% mainstream teachers in a pastoral role (e.g. tutors) receive 1 day training in MHFA for Schools and Colleges to strengthen their skills in supporting students.
- All teachers attend a 1-2 hour session to raise awareness of mental health issues.

INTERVENTION
All teachers receive mental health awareness session
15% teachers receive MHFA training
8% staff become peer supporters

MECHANISMS OF CHANGE
All staff have access to advice and support
All staff have increased insight into own mental health
All staff have trained colleagues to give advice in supporting students

OUTCOMES
Primary
Teacher wellbeing
Secondary
Teacher depression, absence and presenteeism
Student wellbeing, mental health difficulty, attendance and attainment

REFERENCES
Help-seeking following flooding: Cross-sectional analysis of adults flooded in England 2013/14

Authors: Katie L Hopgood, Thomas D Waites and Maria I Oliver

Location: Field Epidemiology Service, Public Health England

INTRODUCTION

It is projected that if no preventative measures are taken, river flooding will affect 250,000 to 400,000 additional people per year across Europe by the 2080s. It is therefore important to understand the effect that flooding has on help-seeking behaviours so as to enable support services (e.g. local government, healthcare and the voluntary sector) to plan and react to the needs of the indirectly or directly affected by flooding.

Few studies have explored the longer-term (greater than three months post-exposure) impact of flooding on help-seeking behaviours in high-income countries, however several studies have found that exposure to flooding directly increases the risk of psychological ill-health; one study of which found that the risk of physical illness following flooding declined when adjustment was made for psychological distress.

METHODS

This analysis is based on a self-completed questionnaire sent from 12th January 2015 to 8,000 households by Public Health England in postcode areas known to have been affected by flooding between 1st December 2013 and 31st March 2014. In York, approximately 2% of 11,583 completed questionnaires. The questionnaire included 36 items collecting demographic information and assessing exposure to flooding. These were in addition to validated mental health outcome measures and two questions on help-seeking behaviour.

Participants were asked if they had sought help from a list of sources since a) December 1st 2013 and b) in the last four weeks prior to questionnaire completion. Participants could select multiple sources. Flooding was categorised as follows: people who reported water in liveable rooms in their home (flooded), people who reported disruption to their lives as a result of flooding (disrupted) and people who reported no impact of any kind as a result of flooding (unaffected).

The primary study outcome was help-seeking from any source since December 2013. A secondary outcome, help-seeking in the last four weeks, was also created. Due to smaller numbers seeking help in the last four weeks sources of help were divided into ‘health services’ (GP, hospital; NHS 111 or counsellor/therapist) and ‘voluntary and/or community services’ (voluntary charity, friends and/or family).

RESULTS

Associations between the binary outcomes of help-seeking and the exposures of interest were examined using simple and multiple logistic regression models in STATA V13. The model included all exposure variables and the outcome variable was whether or not the participant had sought help with mental health issues. Odds ratios were adjusted for age, sex, pre-existing illness, deprivation, local authority, employment status and any mental health outcome (Table 1).

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Disrupted (unaffected reference group)</th>
<th>Flooded (unaffected reference group)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any source</td>
<td>aOR (95% CI)</td>
<td>p=0.004</td>
</tr>
<tr>
<td>GP</td>
<td>2.03 (1.42-2.66)</td>
<td>p=0.001</td>
</tr>
<tr>
<td>Hospital</td>
<td>2.07 (1.23-3.48)</td>
<td>p=0.001</td>
</tr>
<tr>
<td>Counsellor/therapist</td>
<td>1.38 (0.98-1.93)</td>
<td>p=0.08</td>
</tr>
<tr>
<td>Friends/family</td>
<td>1.46 (0.86-2.45)</td>
<td>p=0.11</td>
</tr>
<tr>
<td>NHS 111</td>
<td>2.42 (1.56-3.72)</td>
<td>p=0.001</td>
</tr>
<tr>
<td>In last four weeks</td>
<td>1.42 (1.02-1.97)</td>
<td>p=0.04</td>
</tr>
<tr>
<td>Any source</td>
<td>aOR (95% CI)</td>
<td>p=0.004</td>
</tr>
<tr>
<td>Health services</td>
<td>1.37 (1.01-1.88)</td>
<td>p=0.05</td>
</tr>
<tr>
<td>Voluntary and community services</td>
<td>2.32 (1.34-4.07)</td>
<td>p=0.003</td>
</tr>
</tbody>
</table>

DISCUSSION

The findings support prior research findings by indicating that a large proportion of the excess odds of help-seeking are likely to be related to the effect of flooding on mental health outcomes. The findings from this study are significant and robust with adjustment for many known and suspected confounders; however there may be residual confounding.

Help-seeking is a self-reported outcome and we were not able to validate reports against health or social care records, therefore it is possible that data is subject to re-call bias as those affected by flooding may be more likely to remember seeking help than those unaffected by flooding. This could result in an overestimate of the odds of help-seeking for those affected by flooding.

The specific reasons for help-seeking were not sought in the questionnaire so it is not possible to attribute the increased odds of help-seeking to issues directly related to participants’ exposure to flooding, e.g. help-seeking for psychological morbidity. However, this does not differ between the affected and unaffected groups and should therefore not bias the results.

This study has found a reduction in the odds of help-seeking when mental health outcomes are adjusted for, however this research is not proof of such mediation, and the pathway to exposure from flooding and help-seeking may be mediated by multiple other factors.

This research was conducted on a population affected by flooding that was predominately white, affluent and living in England; therefore there may be limitations to the generalisability of the findings to other populations. As there is no register of people affected by flooding, it is not known how representative those who responded are of the total population affected.

CONCLUSIONS

- The short-term impacts on physical and psychological health had been reported in the literature, but little was known about the longer term help-seeking behaviour or those exposed to, or disrupted by, flooding.
- This study has shown that there is an increase in self-reported help-seeking up to one year after exposure to flooding.
- An important consideration for the support needs of people affected by flooding is that this research found the odds of help-seeking from community and voluntary sources was significantly higher for both disrupted and flooded respondents approximately one year post-exposure.
- The increase in the demand for help following flooding is an important issue for local health and social care systems to consider in the development of flood response plans and the commissioning of services to support those affected by flooding, specifically those services which can help mitigate the effects of psychological morbidity following flooding on help-seeking behaviour, for example, through early intervention

REFERENCES

An exploration of barriers to accessing a family-led childhood obesity intervention

Dr Katie Long
Gloucestershire County Council/London School of Hygiene and Tropical Medicine

INTRODUCTION

The intractable problem of childhood obesity is well-recognised. In the UK, 21.9% of reception-age children are overweight or obese increasing to 33.2% by year 6 (1). To date no national intervention has significantly impacted these numbers.

NICE guidance recommends “family-based, multi-component lifestyle weight management services” (2). As a result of this guidance and identified local need in Gloucestershire, a family-based childhood obesity intervention pilot was set up in Cheltenham in 2015. The location was a deprived area of Cheltenham with higher rates of overweight children than the Gloucestershire average. The intervention consisted of 2 hourly sessions weekly for 8 weeks with 7-11 year olds and their families, with families referred by professionals. However difficulty recruiting families led to a delay of the initial pilot and eventually running with 3 families rather than the planned eight.

While literature around childhood obesity has explored attitute (3) from interventions, there is little about barriers preventing engagement in the first place.

This aims of this research were to search the literature to determine barriers for parents that their children were perceived by themselves and others as "healthy" (7).

There were 11 interviews, using a framework (figure 1).

METHODS

Systematic searches of Medline, CINAHL and PsycINFO databases were conducted. Papers were included that represented original research investigating barriers to access or attendance for intervention programmes aimed at children with obesity. After screening 3,136 papers, eleven were included in the final review. They were appraised for quality and relevance.

In-depth iterative interviews were conducted with professionals referring families. Thematic content analysis was used to draw out themes from the interviews, using Fishbein’s Integrative Model of Behavioural Prediction as a framework (figure 1).

FINDINGS

Perceived Norms

Perceived norm is the “social pressure one expects regarding performing the behavior” (5).

This was a strong theme in the literature and in interviews. Five papers found both professionals and parents regarded overweight children as normal weight. Non-participants in obesity interventions were more likely to perceive their child as a normal weight than participants (6). It was important for parents that their children were perceived by themselves and others as “healthy” (7).

“Another parent…kept trying to convince me that the child, it was just puppy fat, with this child. And that...all children look big when they’re younger and that puppy fat.” (Interviewee 5)

Local professionals interviewed also felt parents struggled to believe their child was overweight. One local professional felt not only was overweight or obesity considered normal, but overfeeding was desirable:

“A lot of the families in this area….want to make sure that their children are seen to be eating a lot of food…We have a lot of families involved with social care…they want to be seen that they’re feeding their children.” (Interviewee 5)

So being obese is, from the professional’s perspective, seen by families as a social norm and not a serious disease. If families were presented with the medical perspective of obesity, emphasising the long-term risks, the resulting conflict between these different perceptions made families less likely to engage with interventions (8). Fishbein’s Theory reinforces this finding, as it also finds that risk is a “distant predictor of behaviour”.

Participation in childhood obesity interventions was still seen as unusual by some professionals in the literature (9) which ties in with families’ rejecting the intervention as it sets them apart from their peers. In fact, attendance at interventions was linked by Newsom (7) to the participants’ ability to manage the negative expectations expressed by others, i.e. to fit in with social norms.

“It wasn’t received well. It’s almost like, you know, “I’m the parent, I’ll make the decisions on what the dietary choices are. My child, I don’t want to make a big issue of my child’s weight.”” (Interviewee 2)

Perceived Behavioural Control

Perceived control is the extent to which a person feels capable of effectively performing the behavior (5).

This was less prominent in the literature than perceived norms and attitude. Two papers described anxiety among non-attenders at an intervention in their abilities to be able to participate in the intervention (specifically the physical activity aspect), or in their ability to address the problem of obesity. Two interviewees also described a lack of self-efficaacy in a parent they spoke to. One identified that having a fixed start time for the intervention and a requirement to attend regularly for 8 weeks was a barrier to those families, rather than allowing them to start when they were ready to make change:

“The families…don’t feel ready to actually make all the difficult changes…so if they don’t feel ready they’re going to carry on as before to a group as a little bit pointless.” (Interviewee 4)

Attitude

Attitude is a “person’s evaluation of how favorable or unfavorable a particular behavior would be”(5).

In the literature, recognition by parents of the implications of obesity on health was limited. The stigma of being overweight and the resulting bullying and low self-esteem were more pressing concerns.

“…I think people were saying, “I don’t really want to do it. It’s a commitment for over a number of weeks and I’ve got a busy life…” and I don’t think this is the right time for me at the moment.” (Interviewee 5)

RECOMMENDATIONS

● Encourage peer recommendations
● Change to a self-referral, drop-in service
● Change the focus of the intervention from reducing obesity to improving health

ACKNOWLEDGEMENTS
Thanks to Sola Aruna at Gloucestershire County Council (GCC) for the idea for the research, to Sue Weaver at GCC for information on the intervention and contact details of the experts. Thanks for her input and feedback on the intervention and support in identifying professionals to interview. Particularly thanks to Lorraine Williams at LSHTM for her project supervision.

REFERENCES


DISCUSSION

The strength of this research is that it used interviews with local professionals to reinforce or challenge findings from the literature review. The literature review specifically focused on barriers for families enrolling in interventions, not attrition, which has not been well explored in the literature.

Due to pragmatic constraints families could not be interviewed which is a weakness of the work, as it is necessary reliance of one author to interpret the interview findings. This will be remedied in future work.

The findings of this research suggest that framing the intervention as one for families identified with a medical diagnosis of obesity will not encourage attendance. It is important for parents to fit in with their social group, and they are likely to hold a lay perception of obesity as a social norm, not a serious disease.

Normalising attendance at interventions like this may increase recruitment. This could be done through peer recommendations from families who have attended this or similar interventions. Changing the intervention to one which does not require referral by professionals (which could by itself be stigmatising) and does not require weekly attendance for a set period of time might encourage families to attend when they feel ready to make a change. Social groups could then attend together, and overweight or obesity would not be a requirement for attendance, thus shifting the focus to “health” which parents identify as important for their children.
Impact of wear time criteria upon physical activity estimates in children

L. R. S. Price¹, A. V. Rowlands², M. Hillsdon¹

¹ Sport and Health Sciences, University of Exeter, Exeter, EX1 2LU, United Kingdom
² Reader, Diabetes Research Centre, University of Leicester

Introduction

Accelerometry is the method of choice for monitoring children’s physical activity (PA); nevertheless, missing data due to non-wear is common and can lead to selection bias and misclassification of PA. The level of non-wear varies across studies partly due to differences in minimum wear criteria. [1, 2, 3] Setting a high wear threshold for inclusion in data analysis tends to improve the precision of physical activity estimates [4] but increases the number of exclusions (missing data) that in turn can result in selection bias. [3, 5] In an attempt to maximize participant numbers researchers may be tempted to employ more lenient wear time criteria. However, this may lead to misclassification of physical activity (PA) and sedentary time (ST), both through reducing the monitoring period and through failure to capture distinct periods of the day, resulting in inaccurate estimates of PA and ST and masking of true relationships between PA, ST and health.

Aim: The aim of this study was to explore differences in estimates of sedentary time and light, moderate and vigorous intensity PA between complete observation (24 hour per day for 7 days ) and three separate periods of 10 hour wear across 7 days (8am – 6pm; 10am – 8pm & 12pm – 10pm).

Methods

149 children were asked to wear a GENEA activ monitor on their left wrist for 24 hours a day, for a period of 7 days
139 Children assessed for compliance using 60 second epoch macro
84 children achieved 24 hour wear for 7 days
78 children achieved 24 hour wear for 7 days
3 monitors had no data recorded
11 monitors failed to download
1 file was corrupted
1 file failed to convert to epochs

Weekly average estimates of ST and time spent in light, moderate and vigorous PA for 24/7 criteria and for three 10 hour periods. 8am – 6pm, 10am – 8pm, 12pm – 10pm. Using 1 second epoch macro.

There were significant differences between each of the four wear times for daily time spent sedentary (F (2,261) = 191.366, p < 0.001) and time spent in light intensity activity (F (2,261) = 221.784, p < 0.001). Differences in daily time spent in moderate intensity (F (2,261) = 100.969, p < 0.001), vigorous intensity (F (2,261) = 28.890, p < 0.001) and MVPA (F (2,261) = 91.445, p < 0.001) were also seen between both 24hW and the 12pm-10pm time period and each of the other monitoring periods. See Table 1 and Figure 1.

Results

Table 1. Minutes difference in time accumulated in activity intensities relative to 24 hour monitoring

<table>
<thead>
<tr>
<th>Minutes difference relative to 24hour wear</th>
<th>Sedentary</th>
<th>Light</th>
<th>Moderate</th>
<th>Vigorous</th>
<th>MVPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-hours</td>
<td>671.6</td>
<td>-277.76</td>
<td>-273.17</td>
<td>-256.37</td>
<td></td>
</tr>
<tr>
<td>8am - 6pm</td>
<td>179.3</td>
<td>-46.78</td>
<td>-50.36</td>
<td>-59.56</td>
<td></td>
</tr>
<tr>
<td>10am - 8pm</td>
<td>84.25</td>
<td>-24.6</td>
<td>-25.98</td>
<td>-31.52</td>
<td></td>
</tr>
<tr>
<td>12pm - 10pm</td>
<td>16.26</td>
<td>-2.22</td>
<td>-1.88</td>
<td>-3.95</td>
<td></td>
</tr>
<tr>
<td>100.31</td>
<td>-26.63</td>
<td>27.66</td>
<td>35.29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

• Time in PA and ST was underestimated with the use of shorter wear periods.
• Differences in estimates of MVPA between 24 hour wear and 10 hours wear averaged 29.9 minutes per day.
• Significant differences were also apparent between each of the 10 hour time periods.
• Results support previous research demonstrating an underestimation with shorter wear periods [4, 6].
• PA estimates were also affected by which period of the day was recorded. The highest sedentary time (415 minutes) was recorded for the latest time period (12pm – 10pm). For light activity the period between 8am and 6pm recorded the highest time. There were no significant differences between 8am – 6pm and 10am – 8pm for moderate, vigorous and MVPA.
• Studies with average wear times of 10-12 hours per day that do not take into account the period of the day monitored, may misclassify PA and ST.
• Future studies should attempt to assess differences in time accumulated in specific portions of the day (e.g. school vs. after school), addressing their relationships with health variables, as previous studies have attempted to address this with only limited wear time. [7]

Conclusion

Time in PA and ST was underestimated with the use of shorter wear periods. Researchers may be unknowingly misclassifying PA and ST by not accounting for which period of the day was measured, or by failing to match measurement periods in repeated measures designs. Future studies should use longer monitoring periods to gain accurate assessment of PA and to establish relationships with health variables.

References

‘Listen to your Gut’
Empowering parents to self-care and reduce the demand for antibiotics

Richard Croker, Head of Medicines Optimisation, Northern, Eastern and Western Devon Clinical Commissioning Group, Ruth Dale, Public Health Programme Manager Social Marketing; Tom Lewis, Microbiologist, North Devon District Hospital; Tracey Polak, Public Health Consultant, Devon County Council; Martin White, Public Health Specialist; Darunne Whiting, GP Board Member, Northern, Eastern and Western Devon Clinical Commissioning Group

INTRODUCTION

In response to the stewardship roles outlined in the 2014 Antimicrobial Resistance Strategy Devon County Council Public Health led a partnership with North East West Devon Clinical Commissioning Group, Northern Devon Healthcare NHS Trust, Public Health England Primary Research Team and the Devon Local Pharmaceutical Committee to develop a pilot social marketing intervention to reduce demand for antibiotics.

The ‘Listen to Your Gut’ campaign ran from September to November 2014. It was based on insights about parents’ knowledge and attitude towards antibiotics. The video animation and social media app campaign targeted new parents and deprived parents to help enable them to understand why antibiotics should not always be prescribed and to welcome the self-help guide called ‘Treating Your Infection’ that would be used by prescribers and pharmacists during consultations.

It aimed to increase knowledge of what antibiotics do; their side effects and to enable an understanding that length of illness is not an indicator of need for a prescription and that winter ailments can be treated at home.

METHODS

The campaign was based on a social marketing approach that used the Total Process Planning model. The evaluation design included a ‘before and after’ study to capture changes in ‘intended’ and ‘actual’ behaviour. This used the Theory of Planned Behaviour to distinguish between knowledge, attitude and changes in self-efficacy.

The campaign involved a push and pull approach:

• Push: The ‘Treating Your Infection’ leaflet used by prescribers in place of a prescription to support an alternative way to treat a viral illness. This was based upon the Public Health England leaflet ‘How to get better from your illness’.

• Pull: The ‘Listen to Your Gut’ animation and social media campaign that aimed to improve understanding about antibiotics amongst parents and foster an attitude that welcomes another way of being treated.

...cold lasting 10 days now I’ll leave it for that length of time… I would have gone to the GPs at 3-4 days before…

...it’s really quite scary when talking about the damage to gut flora

"I don’t want antibiotics for my children unless they need them to get better"

“the consequences about antibiotics need to be made clear to us”

CONCLUSIONS

Co-design with parents and developing insight first is essential. This improved reach to reach parents across North Devon. The qualitative evaluation highlighted that further investment is needed to train professionals who engage face to face with the most vulnerable parents in how to communicate about antimicrobial resistance.

The campaign had a successful impact on the target audience. Listen To Your Gut asked parents what ‘antibiotics’ meant to them and explored the role they played in their lives. This changed the narrative around antibiotic prescribing from being about what not to do to insight-led messaging and towards a positive conversation about how to care for their unwell child.

Understanding how antibiotics work is an important issue for parents. The messaging in ‘Listen to Your Gut’ worked because it first listened to parents and prescribers. It was based on insights and a deep understanding of what mattered to parents. It supported GPs’ and pharmacists to have one shared message with supporting Self-care guides underpinned with the simplicity of seeing the same imagery and messages through different contact points.

ACKNOWLEDGEMENTS

• The Parents of Ilfracombe, North Devon
• Nigel Tremlett, Transform Research Consultancy Ltd
• Anna Bradley, Ilfracombe Childrens Centre
• The Agency, Bath
• Dr Oluve Ashurukoreop, Chair, European Antibiotics Awareness Day, Public Health England
• Dr Chidora McNulty, Head, Primary Care Unit, Public Health England
• John Bryant, Childrens Lead, Devon County Council

REFERENCES

www.listentoyourgut.org.uk
Can hospital administrative data be used to reliably measure complications associated with hip fracture admissions?

Edmunds, M; Specialty Registrar in Public Health, South West Public Health Training Programme
Neuburger, J; Lecturer in Statistics, London School of Hygiene and Tropical Medicine

INTRODUCTION

Annually within the UK, there are around 70,000 to 75,000 admissions for hip fracture, costing around £2 billion a year, with the main costs being hospital bed days and health and social care (1). Mortality associated with hip fracture is high, with around 10% of people experiencing a hip fracture dying within one month. There is currently a big effort to improve care of hip fractures, but at present there is no agreed method for defining and classifying complications after hip fracture using hospital administrative data. Such a method would enable routinely available data, such as the English Hospital Episode Statistics (HES), to be used to assess complications associated with hip fracture surgery, which would help improve understanding of variations in quality of care and drive service improvement.

The aim of this project was to conduct a literature review of methodologies using algorithms based on routinely collected administrative hospital data to identify two hospital acquired medical complications (chest infection and urinary tract infection) and two surgical complications (deep infection and gastrointestinal haemorrhage), which are associated with hip fracture patients. The effectiveness of these methodologies were evaluated by looking at their associated sensitivities, specificities, positive predictive values (PPV) and negative predictive values (NPV) compared to a “Gold standard” of clinical review of case notes.

METHODS

A single reviewer conducted searches in Embase, Medline, Web of Science and Health Management Information Consortium, for relevant literature published from 2000 to present. Three broad search terms were triangulated to identify relevant papers (Figure 1).

Studies were aggregated and de-duplicated using Mendeley, then the title and abstract of each reviewed against eligibility criteria using a PICOIST framework.

RESULTS

Results of database searches

The four database searches resulted in a total of 3,724 papers being identified. After de-duplication, 2,102 papers remained for review by title and abstract. Using the pre-defined eligibility criteria, this resulted in 27 papers being selected for full review. Twenty of these were not eligible, leaving seven papers for inclusion.

- Five of the seven studies were from the USA, with the other two being from Canada and Germany.
- None of the study populations were hip fracture patients
- The identified studies discussed complications associated with urinary tract infection (five), chest infection/pneumonia (four) and Gastrointestinal haemorrhage (one).
- No studies evaluating complications for deep infection met the inclusion criteria.

Figure. Search diagram

Summary of study results

- Specificity for both UTIs and pneumonia was generally very high, with all studies having a specificity of 84% or greater.
- The sensitivities for both UTIs and pneumonia was variable, but generally quite low, ranging from 22.2% to 68.5% and 35% to 100% respectively.
- No sensitivity or specificity data were available for GI Haemorrhage.
- For UTIs, estimated PPV’s varied from 15.8% to 96.3%, but were generally low. As would be expected, PPV generally increased with prevalence.
- PPVs for Pneumonia were also very variable, ranging from 25.0% to 91%. Prevalence (where known) was lower than would be expected in hip fracture patients.
- One study, which did not include an indication of prevalence, estimated the PPV for GI haemorrhage at 77%.

Table 1: Results of selected studies, separated by complication type

<table>
<thead>
<tr>
<th>Paper</th>
<th>Complication Type</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>PPV</th>
<th>NPV</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heisar C et al. 2009</td>
<td>UTI</td>
<td>22.2%</td>
<td>99.7%</td>
<td>92.3%</td>
<td>87.5%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Meddings J</td>
<td>UTI</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Qian H et al. 2004</td>
<td>UTI</td>
<td>55.6%</td>
<td>99.7%</td>
<td>62.5%</td>
<td>99.7%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Romano P et al. 2002</td>
<td>UTI</td>
<td>50.0%</td>
<td>99.5%</td>
<td>77.3%</td>
<td>98.2%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Zhao C et al. 2009</td>
<td>UTI (CA-UTI) (catheter code)*</td>
<td>66.7%</td>
<td>84.5%</td>
<td>15.8%</td>
<td>98.3%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Qian C et al. 2009</td>
<td>UTI (CA-UTI) (any surgery)*</td>
<td>65.8%</td>
<td>91.2%</td>
<td>20.5%</td>
<td>98.9%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Zhao C et al. 2009</td>
<td>UTI (CA-UTI) (major surgery)*</td>
<td>65.4%</td>
<td>94.4%</td>
<td>29.7%</td>
<td>96.5%</td>
<td>3.5%</td>
</tr>
<tr>
<td>McCarthy E 0025-7079</td>
<td>Pneumonia (Postoperative)</td>
<td>-</td>
<td>80%*</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>McCarthy E 0025-7079</td>
<td>Pneumonia (Aspiration)</td>
<td>-</td>
<td>91%*</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Qian H et al. 2004</td>
<td>Pneumonia</td>
<td>35.0%</td>
<td>99.4%</td>
<td>50.0%</td>
<td>98.9%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Romano P et al. 2002</td>
<td>Pneumonia (or empyema)</td>
<td>100.0%</td>
<td>99.7%</td>
<td>25.0%</td>
<td>100.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Stauberger P et al.</td>
<td>Pneumonia</td>
<td>-</td>
<td>-</td>
<td>64.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>McCarthy E 0025-7079</td>
<td>GI haemorrhage (Postoperative)</td>
<td>-</td>
<td>77%*</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

DISCUSSION

Discussion of common methodologies

Whilst all studies used routine hospital data as was required, there was significant variation in the data systems from which the data were extracted, with some varying significantly to those available in the UK. All but one of these systems used ICD-9 coding, which is similar to ICD-10 coding in the UK, and translation tools are available to help compare them.

No two studies investigating the same types of complication (such as UTI) used the same ICD codes in their definitions, with some being very general and others being very specific (in some cases just a single code).

One key requirement of the studies was to be able to identify complications that were associated that were hospital acquired. The most commonly used methodology was the use of a “Present on admission” indicator, which does not currently form part of the UK ICD-10 dataset. The data used for the other methods of identifying hospital acquired complications, secondary diagnosis codes and procedure codes, are available in the UK, though the papers reviewed suggest their effectiveness in doing this is questionable.

Discussion of study results

The generally low sensitivities of the studies indicate that use of the tested methodologies would result in a significant number of complications not being identified. The higher specificities however suggest that those that were identified as having a complication were done so correctly.

Whilst complications associated with hip fracture are not uncommon, with certain types of complication occurring in around 10% of patients, the positive predictive value of these methods when applied to hip fracture complications is likely to be relatively low, meaning that a significant proportion of people identified as having a complication would be wrongly identified. This raises questions about whether these methods could be used for the purposes of performance monitoring. Furthermore, other studies have suggested that up to half of variation in performance between best and worst performing hospitals can be attributed to differences in their coding methodologies.

CONCLUSIONS

Whilst the use of algorithms based on routine hospital administrative data to detect hospital associated complications has potential, only limited evidence is available regarding how reliably this technique could be used with patients admitted to hip fracture in the UK. The usefulness of this technique is hampered by poor and inconsistent quality of the underlying data.

As none of the reviewed studies were from the UK, or directly assessing complications in hip fracture patients, how applicable their findings are to UK hip fracture patients is questionable. Further research is required to develop and evaluate a more robust methodology relevant to hip fracture patients in the UK.

ACKNOWLEDGEMENTS

I would like to thank my LSHTM tutor Jenny Neuburger for her ongoing support during this review, LSHTM Library Services for their help formalising search terms and helping to source documents, and my academic supervisor Dr Iain Lang for his guidance during the write up.

REFERENCES

The aim of this project was to make contact with all Independent schools in B&NES, Swindon, Gloucestershire and Wiltshire and explore existing pathways for vaccination of pupils attending these schools.

A coherent school list was produced using information from Local Authorities and the Screening and Immunisation Team. Data cleansing ensured the list was comprehensive and accurate.

41 schools were contacted by email or by phone. 36 schools responded to the offer of speaking to the Screening and Immunisation team.

A template questionnaire was asked to all schools who responded. Phone conversations provided invaluable information about the current situation for immunisations in this geographical area.

There were many issues raised by nurses based in Independent schools, some of which are detailed above. Overall there was confusion about who is responsible for each part of the immunisation process. Communication between different groups of healthcare professional was poor, often with nurses based in Independent schools feeling ‘out of the loop’.

Geographical issues can further complicate this situation, particularly when a child attends a school in a different local authority area to where they are registered with their GP. The local area may have different commissioning arrangements to the area in which they attend school.

The NHS has developed a comprehensive immunisation schedule which begins at two months of age and continues throughout childhood development into adulthood. These immunisations are offered to all UK residents and are delivered via a range of healthcare professionals and locations, from GP practices and Pharmacies to Schools and Colleges.

This project investigated provision of vaccinations to children attending secondary school, focusing on children attending Independent schools. The current UK immunisation schedule for adolescents is:

- Meningococcal group A, C, W and Y vaccine (MenACWY)
- HPV
- Td/ IPV
- Mumps
- Tetanus, diphtheria and polio
- Varicella

In April 2013 The Lancet published an article highlighting vaccination issues in Independent schools and the impact of these on the delivery of vaccines to children attending independent schools. The article highlights that provision of immunisations in independent schools is very varied, often up to date vaccination policies are not in place. Independent schools with pupils from overseas have extended responsibility for these pupils including addressing any health issues.

Mumps outbreak in private schools: public health lessons for the post Wakefield era

In September 2012, we managed an outbreak of mumps among pupils in a Swindon independent school. The school had around 350 pupils aged 4-18 years, but the mumps outbreak was confined to students aged 13-18 years. Many pupils come from overseas, and in particular from east Asia.

Researchers have suggested that the ‘out of the loop’ feeling can be due to a lack of information on the part of the school relating to the immunisation status of their pupils, or lack of information on the part of the healthcare team, or lack of information on the part of the child as to who is responsible for each part of the immunisation process. Communication between different groups of healthcare professionals was poor, often with nurses based in Independent schools feeling ‘out of the loop’.

Discussion

- The aim of this work was to investigate the current arrangements for the immunisation of children attending independent schools in BGSW
- An email message from Nurses based in Independent schools was sent to all nurses in B&NES to Independent schools stating that they would welcome commissioned immunisation teams to Independent schools to ensure all pupils are offered the opportunity to be immunised
- The majority of schools did not have a comprehensive immunisation protocol or procedure to ensure children were offered vaccinations, and many did not have the knowledge about changes to the school aged immunisation schedule
- The key recommendation of the project was to change commissioning arrangements to ensure pupils attending independent and maintained schools are offered all available vaccinations in School
- Contract renegotiation meetings were held by NHS England (immunisation commissioners) with each of the school aged immunisation providers to establish independent schools as part of core vaccination work

Outcomes

The delivery of adolescent immunisations to children attending Independent Schools in B&NES, Swindon, Gloucestershire and Wiltshire (BGSW) - an examination of policy and practice

Melanie Little, J.Ferrie, D.Messom, Dr A.Gjini

Introduction

The current UK vaccination schedule is:

- HPV
- Td/ IPV
- Mumps

Nurses are able to deliver these immunisations in all schools, state funded and independent.

Immunisation team offers immunisation sessions to all schools, state funded and independent.

Immunisation team offers immunisation sessions to all schools, state funded and independent.

Immunisation team offers immunisation sessions to all schools, state funded and independent.

Conclusion

This audit resulted in a change in commissioning arrangements allowing all children educated in school in B&NES, Swindon, Gloucestershire and Wiltshire to be offered school aged immunisations as per the national schedule, in their school. This will make a positive contribution towards the health of adolescents and it is hoped this will lead to a greater uptake of immunisations. Further work is essential to build links with Immunisation teams, as well as keeping nurses based in Independent schools up to date.

References and Further reading


Evaluating the fidelity of implementation of a voluntary sector-led, community-based diabetes prevention and management programme

Michele Kok1, Mat Jones1, Emma Solomon-Moore2, Jane Smith3, Colin Greaves3, Jaine Keable4, Alexis Walsh4
1University of the West of England; 2University of Bristol; 3University of Exeter Medical School; 4Westbank Community Health & Care, Devon

INTRODUCTION

- Living Well, Taking Control (LWTC) is a community-based type 2 diabetes (T2D) prevention and management programme:
  - Observing: To promote sustainable healthy lifestyle changes
  - Target population: people with pre-diabetes & newly-diagnosed T2D
  - Core component of intervention: Group-based structured education sessions delivered weekly, for 4 weeks, by trained facilitators
  - This intervention was designed to meet evidence-based recommendations from NICE.
  - The clinical and cost effectiveness of the diabetes prevention component of LWTC is being evaluated in the ConfPlod trial.
  - The Fidelity of Implementation Study is part of a wider service evaluation of LWTC, and is critical to successful translation of evidence-based interventions into practice.
  - The heart of fidelity is often considered to be intervention delivery, whose core components are adherence and competence (2).
  - Adherence - extent to which facilitators conform to the intervention protocol
  - Competence - skillfulness in the delivery of the intervention

AIM: To assess the fidelity of implementation of the LWTC programme, with a focus on facilitator adherence and competence.

METHODS

STUDY SETTING
- Four facilities in Devon: 3 in Exeter, 1 in Tiverton
- Programme delivered by the voluntary-sector organisation, Westbank.

DATA COLLECTION
- Audio recording of sessions conducted from 20 January to 5 March 2015
  - 5 pre-diabetes and 2 diabetes groups (total of 49 participants)
  - 28 sessions = 49 hours of audio recording
  - Course satisfaction data was used to support findings on competence.

DATA ANALYSIS
- The level of implementation for each item was rated: Low/not observed (1 point); Observed to a small degree (2 points); Observed to a medium degree (3 points); High implementation (4 points)
- The level of implementation score for each component = Sum of compulsory items (k) / Number of compulsory items
- Overall level of implementation score for each group = Average of the scores from the four sessions
- The goal for an acceptable level of implementation was set at 80%
- 10% recordings tested with Kappa statistics (κ) for inter-rater agreement

RESULTS

PARTICIPANT CHARACTERISTICS
- Using questionnaire data, 4-tests were conducted to see if there were any significant differences between the participant characteristics of the Fed Study sample compared to the wider Westbank sample:
- There were no significant differences between the groups except for the following characteristics:
  - Participants in the fidelity groups were significantly higher (p<0.05) but had a significantly lower HbA1c (p<0.05) than the overall Westbank participants.
  - The overall Westbank participants had a significantly higher education level than participants in the fidelity groups (p<0.05).

ADHERENCE
- Examples of adherence items on the fidelity checklist:
  - Assess importance & confidence in making healthy lifestyle changes
  - Goal-setting or review goals set

MEAN
- 3.44
- 4.00
- 4.00
- 4.00
- 3.81
- 85.89%
- 100%
- 100%
- 100%
- 95.14%

IMPLEMENTATION OF OPTIONAL ITEMS
- The overall percentage of optional items implemented ranged from 45.45% to 63.64% across all groups.
- ‘Offering refreshments’ and ‘Repeating clinical metrics’ were always implemented.
- The optional walk or seated exercise in Session 3 was implemented for one group.
- The optional relaxation exercise in Session 4 was never implemented.
- Supporting to healthcare professionals, local services, or additional support were carried out as required.
- None of the three additional optional items for diabetic participants were implemented; i.e. expectations from healthcare professional, information about annual reviews, and the 15 Healthcare Essentials.

OVERALL IMPRESSION OF GROUP DYNAMICS
General observations of group dynamics from the audio recordings:
- Participants: Professional; patient; handled questions well, with good explanations
- Effectively encouraged group participation and engagement
- Encouraged participants to share ideas and support each other in making changes
- Supportive of participants who were negative, demotivated, or less confident in making healthy lifestyle changes

MEAN
- 3.44
- 4.00
- 4.00
- 3.79

DISCUSSION
- Results suggest that the group sessions were delivered to a typical sample of programme participants, which allows the intervention outcomes to be generalised to a certain degree, to the wider Westbank sample.
- It might have been challenging for the facilitator to address all the diabetic participants’ questions within the allocated time of the session, while still adhering to the protocol.
- Neither facilitator had previous training in mental health and wellbeing support, which may have affected confidence in delivering Session 4.
- The moderate inter-rater agreement for the adherence criteria, may be due to the rates having varying interpretations of some of the criteria.
- All participants were required to provide consent at the start of Session 1. The ‘confidence agreement’ criterion was a measure of facilitators’ competence in creating an open and safe environment – it may be assumed to have been implemented prior to the recorder being turned on.
- Lack of local facilities, facilitator expertise, or time, are possible reasons why optional activities/items were not implemented more often.
- It is recommended to review the programme protocol to give clearer guidance and enhance facilitator training in the area of mental health and wellbeing, in order to improve delivery of that intervention component.
- A more robust method of assessing facilitator competence may need to be implemented.

CONCLUSION
- The LWTC programme facilitators displayed a satisfactory level of adherence and a high level of competence.
- The level of fidelity established for the LWTC group-based education intervention is considered appropriate, and will provide some confidence in findings related to intervention effectiveness.
- The study demonstrated the viability and meaningful fidelity in a voluntary-sector-led public health initiative.

REFERENCES

ACKNOWLEDGEMENT

The LWTC programme and evaluation are funded by the Big Lottery.