



Do major events make people more active?

The impact of participation in the Flora women's mini-marathon on physical activity behaviour in women

Research Report 1

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Foreword

On behalf of the Council I am very pleased to publish this report “*Do major events make people more active? The impact of participation in the Flora women’s mini-marathon on physical activity behaviour among women.*”

Mass sporting events like the Flora Women’s Mini-Marathon, whether they are local, national or international affairs enjoy massive profiles and generate a lot of passion and enthusiasm among participants and spectators alike. However, little is known as to the effect these events have on people’s behaviour and specifically, whether participating in such an event helps participants to become more active on a sustainable basis.

The purpose of this research is to examine this issue and to assess what could be done to facilitate mini-marathon efforts to become more active on a longer term basis.

The Council is committed to supporting this type of research to help guide its policies and programmes, and ensure that its decisions are based on best available evidence. Previous research has informed us of the need to attract and keep women involved in sport which led directly to the establishment of the Irish Sports Council’s ‘Women in Sport’ initiative.

It is important that the Council has a clear understanding of the barriers and motivations for women’s participation in sport. This is a challenging task as quite often the most difficult population to reach are those who are not active at all. This report indicates that the Flora Mini-Marathon attracts a lot of women who may be otherwise inactive. It highlights a desire among many women to be more active longer-term and provides some key insights into how we can support this desire.

This includes the importance of developing “Meet and Train” groups, having more organised events in the participants’ locality and issuing regular prompts via email / text messaging and other forms of media. This presents a challenge for relevant stakeholders to develop a more coordinated approach to delivering supports and services to min-marathon participants. The Council is committed to working with these stakeholders including other Government agencies, National Governing Bodies like Athletics Ireland, the Mini-Marathon organisers and their sponsors, the Local Sports Partnerships, and the charities which benefit enormously from the event.

One of the very positive things to come out of the report is that the overwhelming majority of women who participated raised money for charity and cite this as their main reason for taking part. Altogether, 281 charities were represented in the 2007 Flora mini-marathon and this provides an excellent opportunity to make women aware of activities in their area as well as information about being physically active by providing this information to the charities to pass on.

I would like to thank the researchers at Waterford Institute of Technology for preparing and writing this report, in particular the authors, Aoife Lane, Dr. Niamh Murphy and Professor Adrian Bauman. I also thank all the women who participated in the study where it is hoped the implications of the report will ultimately benefit these women by helping to guide future programmes and initiatives.

John Treacy

Chief Executive

This work has been funded by the Irish Sports Council and could not have taken place without the considerable help of many. In particular, Gerry McGrath and Pat Coyle from the Mini Marathon organizing committee, Professor Adrian Bauman and Tien Chey at the Centre for Physical Activity and Health at the University of Sydney, and Peter Smyth, Research Manager at the ISC provided invaluable input. Thanks to the thousands of women who have taken part in the surveys and given so generously of their time.

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Background

This report is based on information collected during 2007 on the physical activity habits of participants before and after the Flora Women's Mini Marathon 10k event, the largest women's only event in the world, which attracts over 40,000 women annually. There can be no doubt that many people are more active on the day of the event itself, but no evaluations in Ireland, or elsewhere worldwide (Murphy and Bauman, 2007) have assessed pre-event physical activity patterns, or tracked the post-event activity of participants. If mass sporting events do indeed impact upon previously inactive individuals within the population, they may be of significant public health interest. Furthermore these events engage significantly with the community, providing immediate access to large numbers of people and presenting a platform for public health interventions. Many agencies in the sporting, health, and corporate sectors spend considerable time, money and effort on organizing events and this report explores the actual and potential gain that can be realized.

This report presents data on the physical activity characteristics of participants tracked before the event, 2 months after the event, and 6 months after the event. The report addresses the following research questions:

1. What are the characteristics (demographic, training habits, knowledge etc) of mini marathon participants, and what does this mean for promoting physical activity amongst these groups?
2. How active are mini marathon participants?
3. Are women knowledgeable about the benefits of physical activity, are they confident in their ability to exercise and are they accurate in their self ratings of physical activity?
4. Do women remain active 2 and 6 months post-event?

The report is the first in a series of papers exploring the potential of events to impact upon public health. Further reports will follow on:

- Understanding the characteristics of physical activity relapsers (women who reported being active at or after the Mini-Marathon event and subsequently became inactive) which can help policymakers and exercise professionals target their efforts more effectively.
- The effects of community-based interventions to increase physical activity amongst inactive Irish women.-a randomised controlled trial
- A step-by-step guide for sporting and health professionals to evaluate and capitalize on events

Methods

Following a pilot study undertaken in April 2006 (n = 1,179), a survey instrument was refined in advance of the 2007 event and delivered by web and mail prior to race day on June 4th 2007. “Meet and Train” groups were specifically targeted through records in the Athletics Association of Ireland (AAI), the Local Sports Partnerships (LSPs), and a sample of the charities represented in the event. A two and six month follow up of those who completed the baseline survey was undertaken in August and December 2007 to assess physical activity habits, attitudes to, and self efficacy for physical activity. Matched analysis was undertaken to collate data on participants who responded at baseline, two (n=4,786) and six months (n=2,095). The surveys (baseline and follow up) were designed by the research team in Waterford Institute of Technology (WIT) and incorporated a variety of tools, including the International Physical Activity Questionnaire (IPAQ; IPAQ, 2005), the Irish Sports Council’s (ISC) Sports Monitor Questionnaire (ESRI, 2007) and the latest Irish National Health and Lifestyle Survey 2006 (SLÁN; Morgan et al, 2008). On the day of the event, 414 brief physical activity interviews with a random sample of women were also conducted. *Appendix 1* illustrates participant recruitment and progress through the study.

Results

1. What are the characteristics (demographic, training habits, knowledge etc) of mini marathon participants, and what does this mean for promoting physical activity amongst these groups?

1.1 The mini marathon attracts women who are well educated, and ethnic minorities are under represented

According to 2006 Census data (Central Statistics Office, 2006), 88.8% of the population are ‘white Irish’ but just over 95% of mini marathon participants are white Irish. In the mini marathon population, 63% had undertaken complete or some tertiary level education compared to data from the Census, which shows that 20.9% of women over aged 15 had partial or complete third level education. Only 16% of mini marathon respondents had a medical card. However, it is not unusual that lower social class groups are under represented. It is well recognized that there is a significant social class gradient in physical activity and sports participation in Ireland (Lunn, 2007b). Social disadvantage, measured by low educational attainment or low income, has at least as strong an impact as gender and age on the active participation in sport of adults (Lunn, 2007a). A one-off sporting event is unlikely to be a significant stimulus to action for these hard to reach groups. *Table 1* highlights some key characteristics of the respondents to this survey, compared to averages for the Irish population.

Table 1: Characteristics of respondents to the Mini Marathon survey

Characteristic	National Statistics (%)	Mini Marathon Population (%)
Completed 2nd level education or undertook some tertiary education	21	63
"White Irish"	88	96
Medical Card Holder	30	16
Aged between 20-29	17	27
Live in Dublin	29	50
Have no children	40	52

1.2 The mini marathon makes women become more active in the lead up to the event

The mini marathon is an important stimulus to action for most women who sign up for the event with almost 90% of the 11,205 survey respondents doing some training prior to the event. From **figure 1** below, it can be seen that nearly two-thirds of the participants trained for at least 3 months or continuously in the lead up to the event. Older participants (aged 40 and over) trained more seriously for the event than younger women, and women with children also trained more consistently than those without children.

Figure 1 – Training for the Mini Marathon (n = 11,205)



However this doesn't really give us any insight into whether or not those who engaged in all this training might have been active irrespective of whether they were preparing for the mini-marathon i.e. is there a danger that big events such as the Women's Mini-Marathon might just attract the 'converted' i.e. those who are already active.

To look at this we examined the general and habitual patterns of physical activity among the survey respondents. What we found is that a quarter of those under 30 years were low

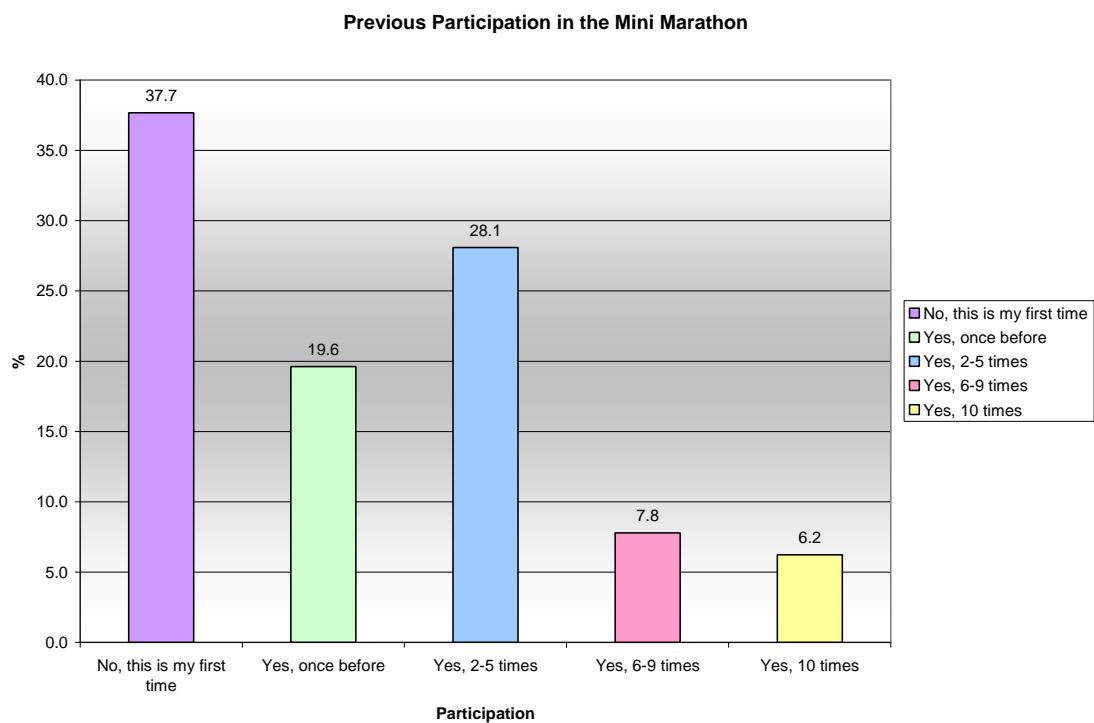
active compared to 31% of 30-50 year olds and 19% of the over 60 group. Women were also less likely to fall into the ‘low active’ category if they were well-educated, they had done the event before and they were older than 30 years. These ‘low active’ participants are not meeting the minimum physical activity requirements, as defined by WHO (2004). **This evidence suggests that the mini marathon engages far more than just the already converted active women within the population, which is highly positive from a public health perspective.**

Targeting women to be more active is important because Irish females participate in lower amounts of physical activity than their male counterparts (Fahey, Layte and Gannon, 2004; Lunn, 2007b), a gap that has its roots in childhood (Lunn and Layte, 2008). The ISC’s ‘Women in Sport’ programme aims to increase the number of women who are active, and events like the mini marathon may help achieve this goal. It would appear to be sound practice to promote activity through such events, particularly in individual sporting activities which tend to support greater and more sustained adult involvement than team sports (Lunn and Layte, 2008).

1.3 Women who do the event tend to participate again, and tend to train at a higher level subsequently

It is a highly positive and encouraging finding that the majority of women who participate in the mini marathon want to, and do, participate again. As Figure 2 below shows, 38% of respondents were participating in the mini marathon for the first time, while 62% were taking part in the event for the second time or more. The number of returning participants may even be higher if the event was not heavily oversubscribed—entries close 2 months before the event each year. Previous participation was positively associated with running, rather than walking the event. Returning participants are also more likely to train at a higher level than first timers, so there is a cumulative beneficial effect. **Large events like the mini marathon, held regionally, and perhaps more often, have the potential to capitalize on this effect.** There would certainly appear to be a demand for such events, and 70% of respondents to the survey indicated that local events would help them to become more active.

Figure 2 – Participation in the Mini Marathon (n = 11,205)



1.4 Training in groups is associated with higher levels of activity, but few reported training in structured group settings; training tends to take place close to where participants live

More than half of the women who trained for the event, did so on their own. For the most part, women trained in the streets and roads around where they lived (75%), and only 11% trained in a gym. Training in local green areas and in gym/leisure centers was approximately twice as common among people residing in cities compared to those living in villages and isolated locations.

While only 13% of the total respondents participated in a “Meet and Train” group as part of their preparation for the event, two-thirds said that the initiation of more walking/running groups in their area and more organized events in their locality would help them to be more active. In support of this is the fact that those who trained with a group of people were more likely to be jogging / running (79%) rather than walking the event and also reporting greater levels of training - 96% of those in groups trained continuously most of the time for at least three months before the event. Some meet and

train groups have grown organically around the Mini Marathon and recent developments as part of the ISC's Women in Sport initiative and through the AAI have begun to increase the capacity-building process in this regard. It is recommended that support for these efforts be continued and if possible enhanced.

Nearly a third of the women who completed the 2 month follow up survey said that print/email based material or text messages would help them get more active, and workplace based physical activity and information through local or national media were identified as potential aids by just over half of the respondents.

1.5 Motives other than health or fitness are important to women

The Mini Marathon has historically attracted women raising money for charity, and, in 2007, approximately 70% of women cited 'raising money for a charity' as their main reason for participating in the event. Other reasons for participating included as a motivator for activity (33%), as a personal challenge (30%), and as a result of a request from friends (20%). Results of the intercept interviews undertaken on the day of the event indicated that 93% actually raised money for charity. **For those trying to encourage populations to be more active this is important. Linking physical activity participation to non-health or fitness-related outcomes, which contribute to the greater good may hold potential.** Worthy causes appear to mobilize Irish communities, the Special Olympics being a particularly good illustration, and the mobilization of communities around active pursuits, towards greater, altruistic goals has considerable potential. In the 2007 mini marathon, 281 charities were represented, but none offered physical-activity related support before the event itself. One opportunity for achieving the above linkage would be to have the charities refer mini-marathon participants to relevant local agencies, such as the LSPs thus connecting the physical activity participation with the "altruistic" drivers which so strongly underpin much of that participation.

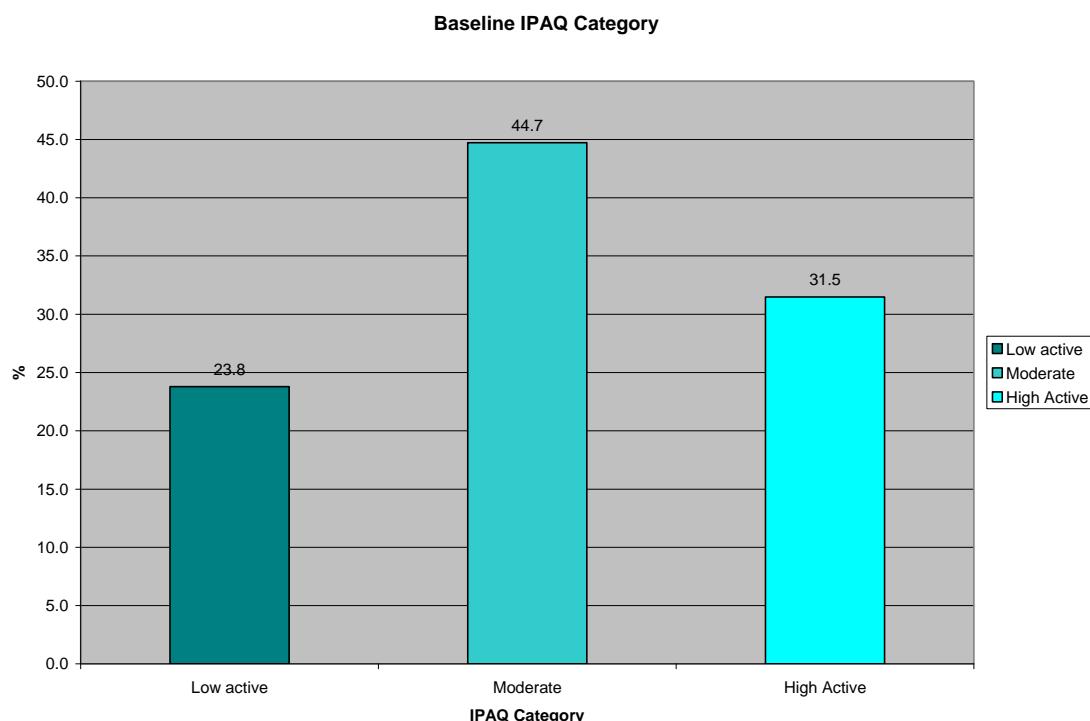
2. How active are mini marathon participants?

2.1 Most mini-marathon participants meet internationally recognized standards for minimum levels of physical activity

Physical activity was assessed using the International Physical Activity Questionnaire (IPAQ, 2005). Activity categories (high, moderate and low) were generated based on each individual's total activity habits. Those in the high activity category engage in at least one hour a day of at least moderate intensity exercise. The moderate category corresponds to half an hour of at least moderate intensity activity on most (five) days of the week. The low active category reflects activity levels less than the above.

Individuals who are categorized in the high or moderate categories meet the World Health Organisation (WHO, 2004) minimum physical activity guidelines of at least 30 minutes of moderate intensity activity on most days of the week (in promotional campaigns this is marketed as the 5x30 message). *Figure 3* indicates that approximately 76% of mini marathon participants meet these guidelines based on self-report.

Figure 3 – IPAQ Activity Categories of Mini Marathon Participants (n = 11,205)



Compared with data from the recently published 2006 SLÁN survey (Morgan et al, 2008), where 31% of women were classified as low active, 53% moderately active and 16% high active, it appears that mini-marathon participants are generally among the more active cohort within the population although it is still the case that almost one-quarter are classified as low active. It should also be noted that the categories used in the SLÁN report were not explicitly defined in the report. Some differences in definition may be at work here. There may also have been differences in the protocols used in the respective surveys.

Women were less likely to fall into the ‘low active’ category if they were well-educated, they had done the event before and they were older than 30 years. As noted earlier, not only do people with lower educational attainment play less sport (Lunn, 2007b) and take part in the mini marathon in fewer numbers, they also are less active even when they do take part. It has often been reported in the literature that having children, for women, is a barrier to being physically active but, in this group of women, those with children had a similar proportion of high active respondents (33%) compared to women who did not have children (31%).

3. Are women knowledgeable about the benefits of physical activity, are they confident in their ability to exercise and are they accurate in their self ratings of physical activity?

3.1 Women generally have a very good knowledge of the benefits of physical activity and feel confident in their ability to exercise, with the exception of low active women

One very positive finding in the survey was that the vast majority of respondents (93%) were aware of the benefits of participation in physical activity. Therefore, this message appears to be getting through effectively, and the sporting and health agencies have no doubt contributed to this high level of awareness.

Women in the mini marathon reported a high level of confidence, or self-efficacy to be active with over 70% of participants feeling they could still be active when stressed or when the weather was bad. Women in the low active group were least confident. **These findings provide further rationale for sporting and health professionals to target their efforts at well-defined sub-groups of women. Knowledge of benefits and self-efficacy are well-recognised antecedents of physical activity and women who are least active need particular support.**

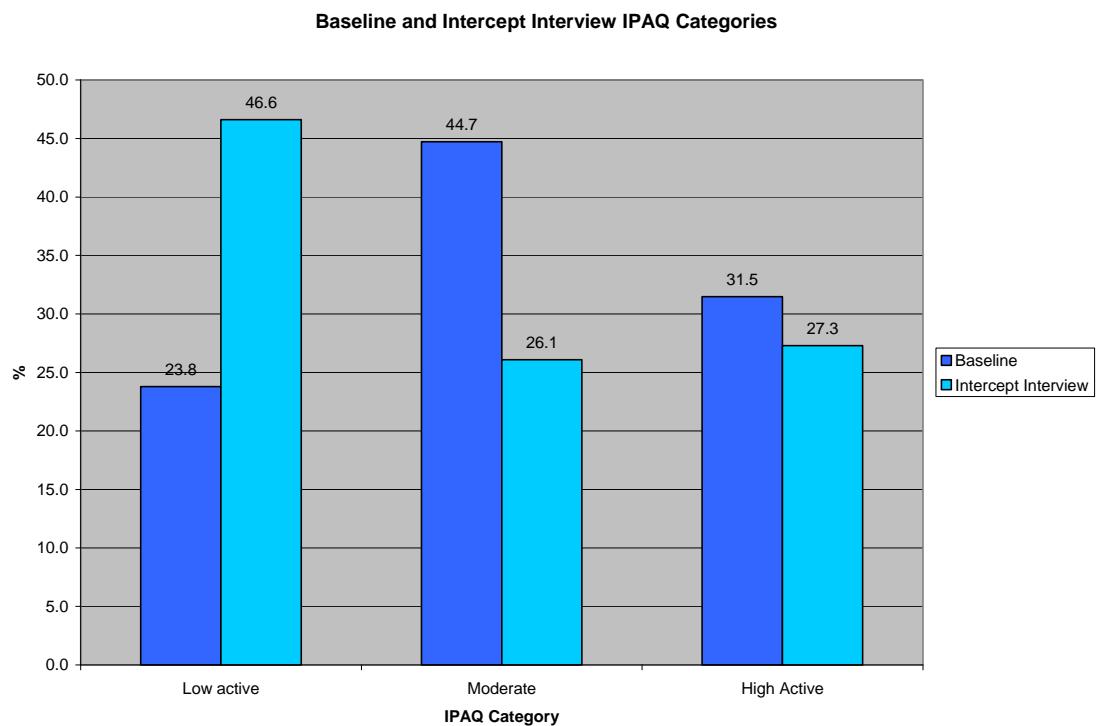
Of course, knowledge does not necessarily translate into action! National physical activity levels have not increased substantially in Ireland (Morgan et al, 2008) and we remain in the lower third of European countries with respect to participation in moderate and vigorous activities (TNS Opinion and Social, 2006).

3.2 Women are consistent in rating their activity levels, with the exception of low active women.

Women were asked to rate their activity levels in a number of ways. Generally those who rated themselves as sufficiently active also measured active using the IPAQ measure. However the most significant exception to this concerned an over-inflation by almost half of those in the low active category of their perceived activity levels against the reported levels.

A common problem with non-random surveys of this type is that those who are most active may be most likely to respond to the survey request, leading to an over-reporting of physical activity habits from the sample. To check whether the sample of responders is representative of the population of Mini Marathon participants, interviews were held with a random sample of participants ($n = 414$) two hours before the event. From analysis of IPAQ categories for the intercept interview data, it was notable that there were less women in the high and moderate physical activity categories compared to the total baseline sample ($n = 11,205$). There was a considerably greater number of women in the low active category, 47% in the intercept interview sample compared to 24% in the overall group (*Figure 4*). This lends some support to the assumption that the least active mini marathon participants may be least likely to respond to surveys of this type, and the actual physical activity levels of the mini marathon population may, in fact, be somewhat lower than that reported here; further reinforcing the message that the Mini Marathon attracts inactive participants.

Figure 4 – Total Baseline and Intercept Interview IPAQ Activity Categories



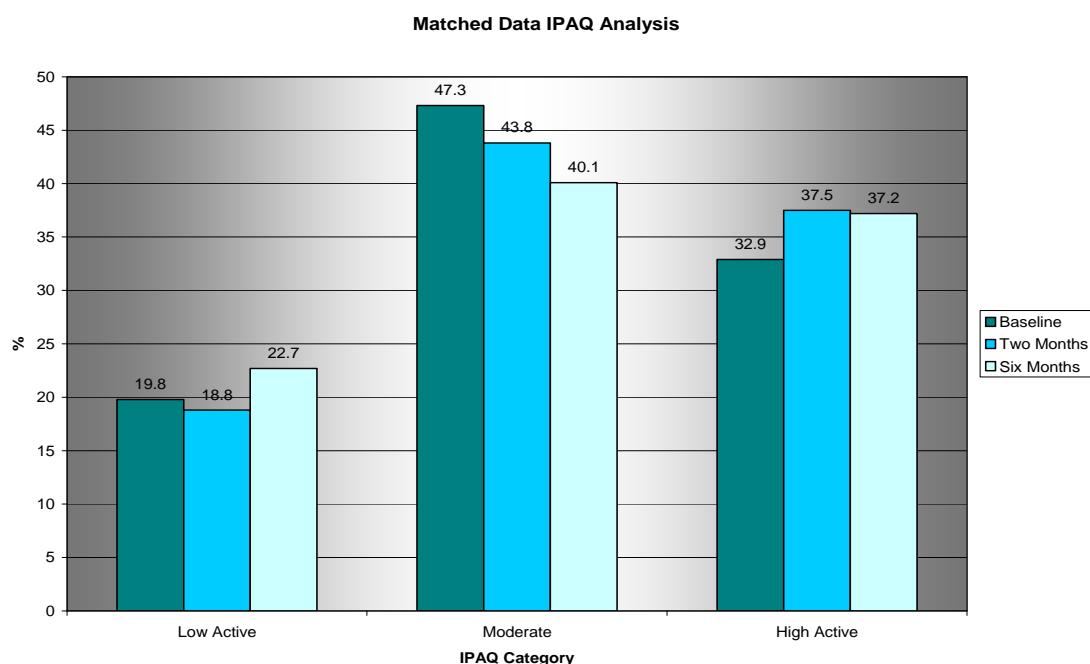
4. Do women remain active 2 and 6 months post-event?

4.1 Introduction

Matched analysis resulted in 2,020 participants being matched at baseline, two month and six month follow up. This facilitated accurate analysis of physical activity habits over the three time periods. While noting earlier that the activity levels of the mini-marathon population may be lower than reported from the large sample surveys it is important to remember that only matched samples were used to assess the change in activity levels over time (2- and 6-month periods following the event). Any possible over-reporting of activity levels is likely to have been consistent throughout the measurement period. Also, given the size of the matched sample we can be reasonably confident that changes in reported activity levels accurately reflect the entire mini-marathon population.

The increase in the number of high active women was effectively counterbalanced by a similar increase in the number of low active women as Figure 5 shows.

Figure 5 – Matched Data IPAQ Analysis: Baseline, Two Months and Six Months (n = 2,020)



The numbers of low active women who do not meet minimum physical activity guidelines increased overall from 19.7% at baseline to 22.6% at six month follow up. 2% of the matched group ($n = 43$) were categorized as low active at baseline, two and six months. This is the group of most concern for those involved in population health matters, and an event like the mini marathon is not enough on its own to sustain physical activity levels among this group for 6 months afterwards. More regular prompts may be needed. It is a little unclear how regular these prompts or events should be for maximum effect.

4.2 Women are more likely to remain active when they are older (>30 years), mothers, repeat participants, and well educated

The findings here are consistent with those reported in Section 2.1. Lower education groups (no education or some primary or secondary) had the greatest proportion of low active respondents at baseline, two and six months; at six months 32% of this group were categorized as low active, compared to 21% of the third level educated group. There were slightly higher numbers of high and moderately active respondents in the third level group particularly at two and six months. When women return to participate in the mini marathon again they are more likely to remain active. At six months, 35% of first time participants were high active compared to 54% of individuals who had participated 6-9 times previously.

Of particular interest in this research was the analysis of Mini Marathon participants who were active at baseline, before the event, and then relapsed to lower levels of activity at two and six month follow up. Of the total group ($n = 2,020$), 20% ($n = 414$) were classified as relapsers, and the remainder either maintained or increased their physical activity levels. As noted earlier, analysis of these relapsers will be presented in a later report.

5. Conclusions and Recommendations

The Flora Women's Mini Marathon is, as noted earlier, the largest women's only event worldwide. It attracts over 40,000 women and is heavily oversubscribed. Large numbers of those who take part return to participate in subsequent years. Up to now, nothing was known about the post-event physical activity behaviour of event participants, yet considerable effort is often expended in organizing events, with no evidence that they are a sound investment in terms of public health. This research aims to test the hypothesis that events have a role in encouraging populations to adopt, and maintain physical activity, and gives us insight into how events can best be used to promote the physical activity message with relevant target groups of women. This report represents the outcome of the first phase of this work. The main points to emerge are that:

- It is encouraging that an event like the mini marathon does not just attract the converted exerciser- the event is a stimulus to action for many.
- Activity levels are quite well maintained in the short term, but then drop off 6 months later. So regular prompts to action are probably needed to keep women active.
- The event attracted small numbers of women in lower socioeconomic groups and ethnic minority groups, and this needs to be noted. These groups are always hard for sport and health organisations to reach, yet the evidence is overwhelming that they ought to remain the focus of our efforts to promote physical activity.

There are several recommendations for sport and health agencies.

1. Large events like the mini marathon, held locally, have the potential to capture the interest of the community, and, if held regularly, there is good evidence that participants will return. The current work was conducted with women, and it is unclear whether single sex or mixed events capture the interest of moderately or inactive people most effectively.

2. Such local events should optimally be followed up with small prompts to action. It seems that physical activity levels drop off 8 weeks after the event. We are currently testing which prompts may work best for Irish women who are inactive, or who have relapsed from being active to inactivity, and how often these prompts should occur. Prompts may take the form of printed mailed materials, phone or text messages, or local linkages to suitable programmes and venues for physical activity.
3. Prompts to action are best if they can be tailored to the individuals needs at a particular time. Event organizers could ask permission of participants to contact them with relevant information and include a simple physical activity question on entry forms to aid the tailoring process. The databases held by charity organizations could also be important in this regard. While the charity organizations may not have the capacity to provide physical activity related support to people, they could be a good referral point to Local Sports Partnerships or other community physical activity supports.
4. Event organisers should take the opportunity to profile the physical activity levels and needs of their participants. This would be invaluable for sporting and health agencies to ascertain whether events are actually reaching more than the converted exerciser. It would also allow event organizers tailor events to best suit their clientele, e.g. walking v running events, local vs. national events, charity versus challenge events. The tools used in the current work will be made available to LSPs for this purpose.
5. Meet and Train groups encourage more consistent and higher level of exercise amongst women and should be encouraged. The Athletics Association of Ireland, with the aid of the ISC's Women in Sport initiative are currently rolling out a model of group leader training and support around Ireland and evaluation of this approach would be very useful.

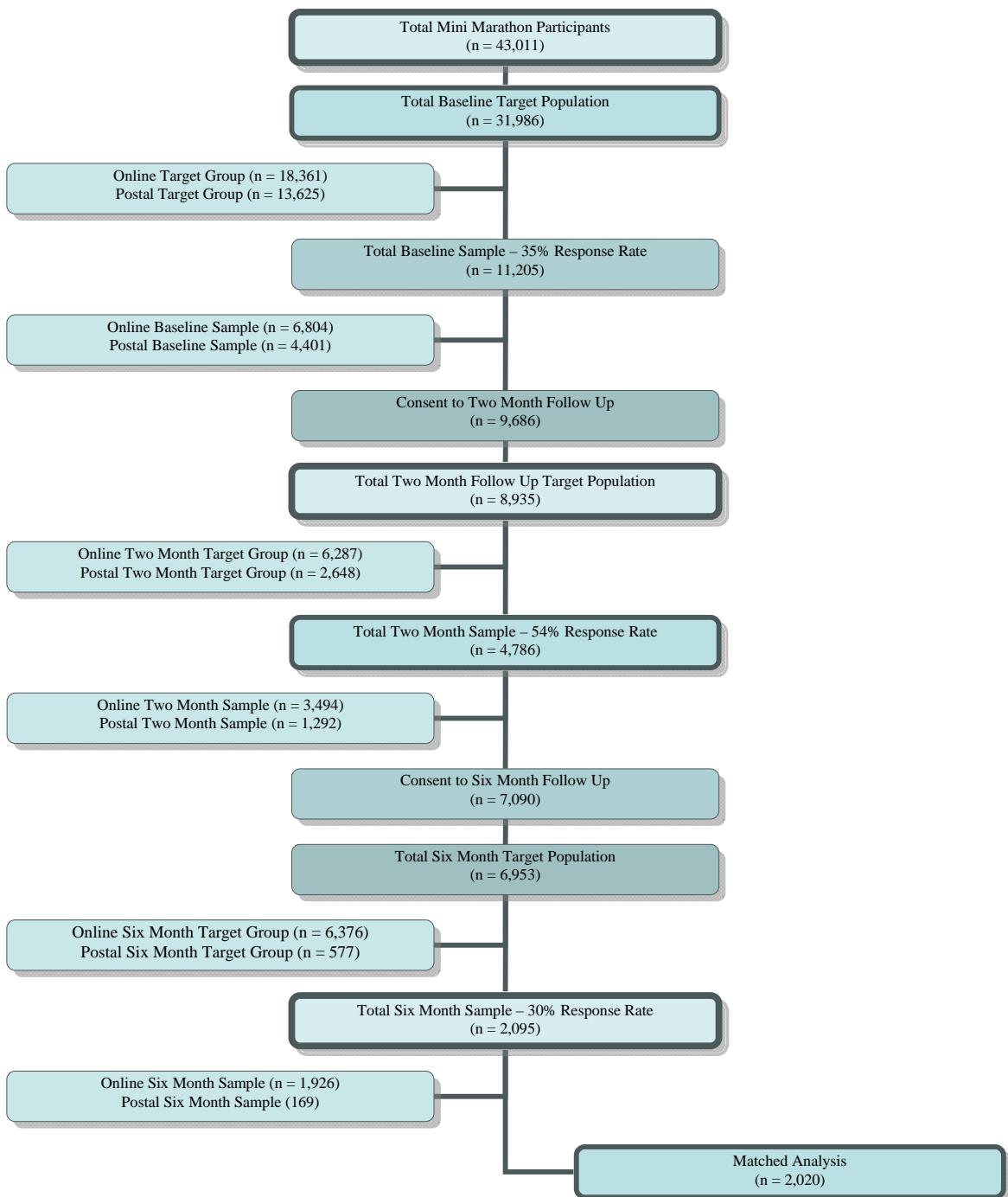
Phase 2 of this work will seek to understand the characteristics of the women whose physical activity relapsed over time, i.e. the women who reported being active at or after the mini-marathon event and subsequently became inactive. The identification of the characteristics of these Mini Marathon participants will facilitate more efficient targeting

of inactive or insufficiently active women and will also permit the tailoring of strategies to increase physical activity to the specific needs of this group. This concept of tailoring and targeting has not previously been objectively implemented and evaluated in the community in Ireland. This phase of the work is a significant opportunity for relevant bodies to build on the potential of events and attempt to further increase and maintain participation among such participants. The Local Sports Partnerships, in particular, may have a pivotal role to play in such attempts and there are challenges for evaluation and implementation. The next phase of this work will present a template for sporting and health professionals to evaluate and capitalize on events and work towards a national participation agenda.

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Appendix 1 – Participant Recruitment and Progress through the Study



Glossary

Athletics Association of Ireland (AAI) – governing body of Athletics in Ireland

Irish Sports Council (ISC) – a government funded organisation that aims to promote the development of sport in Ireland

Local Sports Partnerships (LSP's) – regional centres, funded by the ISC, that aim to deliver recreational sport to local people

Central Statistics Office (CSO) – responsible for the collection, compilation, extraction and dissemination for statistics purposes of information relating to Irish people and Irish life

World Health Organisation (WHO) – directing and co-ordinating authority for health in the United Nations

International Physical Activity Questionnaire (IPAQ) – an instrument that can be used internationally to obtain comparative data on physical activity

IPAQ Activity Categories:

High Active - engage in at least one hour a day of at least moderate intensity exercise

Moderately Active - engage in half an hour of at least moderate intensity activity on most days of the week

Low Active - activity levels less than those described in high and moderately active