Farmers Have Hearts
Cardiovascular Health Programme

Summary Baseline Report

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Acknowledgements

The 'Farmers Have Hearts' Cardiovascular Health Programme (FHH-CHP) is a unique largescale (n=868) health behaviour change intervention tailored for Irish male farmers. The programme is a transdisciplinary collaboration between the National Centre for Men's Health (NCMH) at IT Carlow, Teagasc, Irish Heart Foundation (IHF), Glanbia Ireland, the Health Service Executive (HSE), University College Dublin (UCD). We would like to recognise the contribution of all partners in the programme.

- Most importantly: we would like to thank all the participating farmers for their time and commitment to the FHH-CHP.
- The **HSE** funded the health coach intervention and partly funded the health checks.
- **Glanbia Ireland** provided additional research funding and supported the recruitment of Glanbia Ireland farmers in the branch locations.
- The **IHF** planned, supervised and carried out all health checks as part of the programme, the IHF promoted and invited farmers into the baseline health checks at the marts.
- The **NCMH at IT Carlow**, Teagasc and **UCD** collaborated on the quantitative data analysis and scientific dissemination.
- We also would like to acknowledge all members of the FHH-CHP research team who assisted with the data collection in this baseline phase. The IHF nurses and health promotion staff members for their professionalism and engagement with the programme. The management and workers at the marts and agri-branches for their welcoming attitude and support.
- Whilst supportive of the research, none of these stakeholders had any influence on the content or findings of the study.

Ethical Approval

This research was granted ethical approval from the ethics committee of the Institute of Technology Carlow (IT Carlow).

The FHH-CHP Programme is registered in the International Standard Randomised Controlled Trial Number Register (ISRCTN26792329).

Summary Results: Objective Measures

Farmers with higher risk factors
Clinical measurements

39.8%: Blood pressure ≥140-90 mmHg

46.4%: Total cholesterol ≥5.0 mmol/L

44.5%: LDL-C ≥3.0 mmol/L

30.7%: HDL–C ≤1.00 mmol/L

49.4%: Triglycerides ≥1.7 mmol/L

23.5%: Blood glucose ≥7.0 mmol/L (non-fasting)

85.9%: BMI kg/m2 ≥ 25.0

80.5%: Waist circumference ≥94 cm

Summary Results: Self-reported Measures

Farmers with higher risk factors
Health outcomes and behaviours

9.3%: Smoking

10.3%: Standard drinks per week >17

30.7%: Harmful drinking pattern

32.8%: Physically inactive

13.0%: Stressed ('often'/'all of the time')

34.9%: Wellbeing 'poor' or 'below average'

72.1%: Daily salty/sugary snacks

21.9%: Deep fried food ≥3x per week

49.4%: Meat/poultry ≥2x a day

14.7%: Daily fizzy drinks

79.3%: Intake of fruit and vegetables <5 per day

Background

Farmers Have Hearts - Cardiovascular Health Programme (FHH-CHP) is a comprehensive health intervention targeted at Irish male farmers. The FHH-CHP consisted of a baseline health check, a health behaviour change intervention (health coach by phone and/or M (Mobile)-health by text messages) and a repeat health check at 52-weeks. The overall goal of the programme is to advance public health knowledge through original research that assesses the effectiveness of a health behaviour change programme among Irish farmers in terms of follow-up use of health services; sustainable health behaviour change; and reduced CVD risk.

The FHH-CHP is a collaboration between the National Centre for Men's Health (NCMH) at IT Carlow, Teagasc, IHF, HSE, UCD and Glanbia Ireland. This research programme builds on previous work, 'Farmers Have Hearts' (FHH): a workplace health check programme for farmers which was led out by the Irish Heart Foundation (IHF; see Section 2.1 for a detailed description of the evolution of the FHH programme).

This summary report provides an overview and key findings of the FHH-CHP baseline phase. A comprehensive overview of the baseline results is included in the detailed baseline report.

Overview and Context

- A total of 868 male farmers participated in the baseline phase of the FHH-CHP.
- Data was collected from 12 counties in the South, East and Midlands of Ireland, in 32 different locations between May 2018 – April 2019.
- The research focused on two distinct groups of livestock farmers; those predominantly focusing on cattle and those predominantly producing milk. Data collected from cattle farmers took place at 16 livestock marts (referred to as 'mart' farmers) whilst data collected from farmers with a dairy enterprise took place at 16 Glanbia Ireland branch locations (referred to as 'agri-branch' farmers). Of the total study group, 49.4% (n=429) were 'mart' farmers and 50.6% (n=439) 'agri-branch' farmers.
- Whilst often talked about as a single occupational group, this study demonstrates that farmers are not a homogenous group but rather differ in terms of socio-demographic and farming characteristics.
- Mart farmers were significantly more likely to be older (a higher proportion aged ≥65 years), to be single, to have primary only educational attainment, to be farming part-time, to farm fewer acres (<125 acres), and significantly less likely to be in receipt of help with farming.
- Agri-branch farmers were more likely to be married, to have at least (some) secondary educational attainment, to be farming full-time, to farm more acres (≥125 acres), and to be in receipt of some form of help with farming.
- In relation to health outcomes, a higher proportion of mart farmers had four or more risk factors for CVD compared to agri-branch farmers (79.2% vs 68.8% respectively).
- Understanding the different socio-demographic profiles among farmers is important in terms of tailoring messages to the specific sub-groups. This insight is also valuable for occupational health & safety practitioners who want to reach different groups of farmers with their health & safety campaigns.

Results

Health Status

- The majority (86.6%; n=743) of farmers reported their health as being 'good' or 'very good' which is comparable with the national average of Irish males (85%). The high self-rating of their health status was, for a large proportion of farmers, not reflected in their objective clinical measured and/or self-reported health outcomes of the baseline health check.

General Practitioner

- Most farmers (98.6%; n=846) reported having a General Practitioner (GP) and three in four farmers (73.6%; n=623) reported having visited their GP in the past 12 months. This is higher compared to the national average of Irish males (68%). This contradicts the prevailing view that farmers do not utilise GP services.
- The high level of self-reported GP visits by farmers is incongruent with their low level of awareness of having clinical risk factors for CVD. This suggests that farmers utilise GP services in response to ill-health or injury rather than for the prevention or early detection of disease.

Use of Medication

- Of those farmers who reported already being prescribed medication for high blood pressure (BP; 64.3%; n=166/258), cholesterol (64.0%; n=165/258) and/or blood glucose (10.1%; n=26/258), 47.0% (n=78) had high BP, 17.0% (n=28) elevated total cholesterol (TC), 13.3% (n=22) raised Low-Density Lipoprotein-Cholesterol (LDL-C), 47.9% (n=79) high Triglycerides (TG) levels and 88.5% (n=23) elevated blood glucose.
- This indicates that the farmers risk factors are not adequately controlled despite being on medication.
- Of those farmers (69.0%; n=591/856) who reported not using medication for BP, cholesterol and/or blood glucose, 43.8% (n=256/585) had high BP, 62.6% (n=368/588) elevated TC, 60.8% (n=333/548) raised LDL-C, 57.8% (n=340/588) high TG levels and 29.4% (n=178/588) elevated blood glucose.
- This indicates either a lack of awareness or an incomplete understanding of the condition. The majority of farmers had/were living with either overweight or obesity. This is vastly higher compared to the national average of Irish men (85.9%; n=701 versus 68% respectively).
- Most farmers (80.5%; n=688) had an 'at risk' waist circumference ,≥94 cm.

Alcohol

- Although the prevalence of excessive weekly alcohol consumption reported to the nurse administering the health check was relatively low (10.3%; n=47), outcomes of a self-administered screening tool for 'harmful drinking' showed a three times higher figure: 30.7% (n=247) of farmers were classified as 'harmful' drinkers. This is lower when compared to 54.3% (non-gender specific) of 18-75 year olds taking part in the National Alcohol Diary Survey 2013. This shows a discrepancy between the face-to-face reported drinking habits and the self-administered instrument. This could be explained by some participants opting for a more favourable answer to provide a good impression rather than the more accurate answer in face-to-face interview situations. This effect is commonly observed in surveys and interviews.

Stress

- One in eight farmers (13.0%; n=104) reported experiencing stress 'often'/ 'very often' to the nurse. However, more than one in three farmers (34.9%; n=286) scored 'poor' or 'below average' on the self-administered short well-being scale.

Activity

- Farmers reported high levels of (occupational) physical activity (PA) with 67.2% (n=473) of farmers meeting the guidelines of being moderately active for at least 30 minutes on five days per week or more. This is higher compared to 54% of the national population of Irish males.

Diet

- In relation to dietary habits, it was found that the majority of farmers (72.1%; n=619) reported consuming salty and/or sugary snacks on a daily basis which is higher than 34% (not gender specific) of the national average.
- One in two farmers (49.4%; n=423) reported eating poultry or meat two or more times a day whilst one in five farmers (21.9%; n=188) reported consuming deep fried food three or more times a week. One in seven farmers (14.7%; n=126) reported drinking fizzy drinks daily which is slightly higher compared to 11% of the national population of Irish males.
- The majority of farmers (79.3%; n=652) reported not meeting the recommended daily intake of ≥5 portions fruit and vegetables. This is higher than 70% of the national population of Irish males.

Key Messages

The results of this baseline phase showed a positive and high level of engagement by farmers in the FHH-CHP with 86.4% (n=868) of farmers who participated in the health checks subsequently volunteered to take part in the programme. Farmers were highly positive about their experience with the baseline health check and were overwhelmingly optimistic about their own health status. A noteworthy finding was the high proportion of farmers who reported having visited their GP in the past 12 months which is higher compared to the national average of Irish males (73.6% versus 68% respectively). This debunks the myth that farmers do not utilise health services.

In relation to health outcomes, the baseline results reinforce previous research findings that Irish male farmers have a higher prevalence of overweight/obesity compared to the national average of Irish males (85.9% versus 68% respectively) as well as one in four farmers (73.9%) having four or more risk factors for cardiovascular disease (CVD). Men who have/who are living with overweight/obesity are at greater risk of developing diabetes and CVD than women at the same Body Mass Index (BMI) levels (Global BMI Mortality Collaboration et al., 2016). Overweight/obesity has also been linked to a higher incidence of injury in farming (King et al., 2016), putting farmers at higher occupation safety risk. It is also well established that having multiple risk factors amplifies the risk of developing CVD. For example, having two risk factors for CVD doubles the risk of developing CVD, whilst having four or more risk factors increases the risk of developing CVD threefold (Yusuf et al., 1998). Additionally, those people with multiple risk factors for CVD have been found to be at higher risk for loss of work productivity (Burton et al., 2005).

The findings also confirm previous research in relation to some positive trends in lifestyle behaviours; namely, high levels of self-reported (occupational) physical activity and a low occurrence of smoking and drinking habits. Interestingly, a difference was found between face-to-face self-reported alcohol consumption compared to self-administered reported drinking habits, with the latter indicating more harmful patterns of drinking. Findings also showed that, for most farmers, the majority of the cooking at home is done by farmers' significant others, for example a wife/partner or family member. A high proportion of farmers reported having poor dietary habits such as daily snacking on high salt/sugar foods, a daily high meat consumption and a lower intake of fruit and vegetables. The latter could explain the discrepancy between high self-reported levels of physical activity and the high prevalence of farmers living with either overweight or obesity.

Cardiovascular health outcomes can be positively impacted by a healthy lifestyle and health behaviour change. For example: a reduction of 5-10 cm in waist circumference, can result in improvements in several CVD risk factors (de Koning et al., 2007), whilst a reduction of 5-10% of body weight is associated with lower TC, LDL-C, TG and blood glucose (Brown et al., 2016). Being moderately physically active for 5 days per week for at least 30 minutes is associated with a 15% reduction in risk for all-cause mortality (Leitzmann et al., 2007). A high consumption of fruit and vegetables also has a protective effect against CVD (Wang et al., 2014).

In conclusion, the findings of this baseline phase of the FHH-CHP are a timely reminder of the urgent need to address CVD risk in the farming population in Ireland and the importance of supporting farmers with health behaviour change to improve their cardiovascular health.

References

Brown, J.D., Buscemi, J., Milsom, V., Malcolm, R. and O'Neil, P.M. (2016) '*Effects on cardiovascular risk factors of weight losses limited to 5–10 %*'. Transl Behav Med, 6(3), 339-46.

Burton, W.N., Chen, C.Y., Conti, D.J., Schultz, A.B., Pransky, G. and Edington, D.W. (2005) 'The association of health risks with on-the-job productivity'. J Occup Environ Med, 47(8), 769-77.

de Koning, L., Merchant, A.T., Pogue, J. and Anand, S.S. (2007) '*Waist circumference and waist-to-hip ratio as predictors of cardiovascular events: meta-regression analysis of prospective studies*'. European Heart Journal, 28(7), 850-856.

Global BMI Mortality Collaboration, Di Angelantonio, E., Bhupathiraju Sh, N., Wormser, D., Gao, P., Kaptoge, S., Berrington de Gonzalez, A., Cairns, B.J., Huxley, R., Jackson Ch, L., Joshy, G., Lewington, S., Manson, J.E., Murphy, N., Patel, A.V., Samet, J.M., Woodward, M., Zheng, W., Zhou, M., Bansal, N., Barricarte, A., Carter, B., Cerhan, J.R., Smith, G.D., Fang, X., Franco, O.H., Green, J., Halsey, J., Hildebrand, J.S., Jung, K.J., Korda, R.J., McLerran, D.F., Moore, S.C., O'Keeffe, L.M., Paige, E., Ramond, A., Reeves, G.K., Rolland, B., Sacerdote, C., Sattar, N., Sofianopoulou, E., Stevens, J., Thun, M., Ueshima, H., Yang, L., Yun, Y.D., Willeit, P., Banks, E., Beral, V., Chen, Z., Gapstur, S.M., Gunter, M.J., Hartge, P., Jee, S.H., Lam, T.H., Peto, R., Potter, J.D., Willett, W.C., Thompson, S.G., Danesh, J. and Hu, F.B. (2016) '*Body-mass index and all-cause mortality: individual-participant-data meta-analysis of 239 prospective studies in four continents*'. Lancet, 388(10046), 776-86.

King, N., Janssen, I., Hagel, L., Dosman, J., Lawson, J., Trask, C., Pickett, W. and Saskatchewan Farm Injury Study Team (2016) '*Identifying and mitigating risks for agricultural injury associated with obesity*'. Preventive Medicine Reports, 4, 220-4.

Leitzmann, M.F., Park, Y., Blair, A., Ballard-Barbash, R., Mouw, T., Hollenbeck, A.R. and Schatzkin, A. (2007) '*Physical activity recommendations and decreased risk of mortality*'. Arch Intern Med, 167(22), 2453-60.

Long, J. and Mongan, D. (2014). *Alcohol consumption in Ireland 2013: analysis of a national alcohol diary survey*. Dublin: Health Research Board

Wang, X., Ouyang, Y., Liu, J., Zhu, M., Zhao, G., Bao, W. and Hu, F.B. (2014) '*Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies*'. BMJ (Clinical research ed.), 349, g4490-g4490.

Yusuf, H.R., Giles, W.H., Croft, J.B., Anda, R.F. and Casper, M.L. (1998) '*Impact of multiple risk factor profiles on determining cardiovascular disease risk*'. Preventive Medicine, 27(1), 1-9.

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