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Qualitative Analysis Following the Delivery of a Farmer Lifestyle Program

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ABSTRACT

Background: Irish farmers are adversely affected by noncommunicable diseases. Although there has been an increase in farmer health promotion activities in Ireland, farmers views on lifestyle programs are currently unknown.
Objectives: To qualitatively analyze the impact of the previously mentioned 6-week physical activity and health education intervention on farmer health and to investigate how best to support this cohort moving forward.
Methods: A qualitative study was conducted online (two interviews, three focus groups) with fourteen Irish farmers (53.5 ± 6.5 years) who completed the 6-week program in December 2019. Interviews and focus groups were recorded, transcribed, and analyzed for themes.
Results: The main themes that emerged from this study were barriers, facilitators, and recommendations for lifestyle programs aimed to improve farmer health. Additional views on health and lifestyle behaviors were mentioned. Time of year was reported as the main barrier for farmers to engage in lifestyle programs. The key facilitators reported by farmers were the social health benefits obtained from the program and the farmer-specific nature of the program. Farmers suggested that physical activity and health education programs that are farmer-specific, delivered locally and catering for all fitness abilities should be more widely available to them. Although some farmers reported that they maintained the lifestyle behaviors they established during the initial 6-week program, follow-up supports are needed to encourage sustainable behavior change.
Conclusions: Interventions that are farmer-specific, community-based, and feasible within the context of available resources may be effective in improving farmer health. Working in partnership with organizations that support farmers has the potential to improve farmer health.

KEYWORDS
Health; qualitative; farmer; lifestyle

Introduction

Lifestyle behaviors among farmers have attracted significant attention in recent years. General good health and wellbeing are pertinent to the livelihood of farmers, yet farmers have been shown to have poorer health than the general adult Irish population as they are adversely affected by noncommunicable diseases such as cardiovascular diseases, cancers and chronic respiratory diseases. [1–3] Challenges to farmer health improvement are inevitably linked to lifestyle behaviors and attitudes towards their health.[4] Poor dietary habits have been reported among Irish farmers,[5,6] and although they have positive perceptions about exercise and are physically active, this is not sufficient for cardioprotective benefits.[7] The farming industry is a large part of Irish social identity, yet it has changed significantly over the years as the industry has been threatened by demographic (age), economic, environmental, and occupational pressures.[8–10] The farming population is aging, and stressors such as financial instability, unpredictable weather conditions, long working hours, labor scarcity, exposure risks, and policy changes are impacting the physical and mental health of farming communities both nationally and globally.[11–13]

The farming industry in Ireland is male dominated, and in general males are less likely to seek health advice than females.[14,15] Research indicates farmers are less likely to seek health care for physical and mental health problems in comparison to non-farmers.[1,16,17] Although farmers internationally have been described as being "hard to reach" with respect to health promotion interventions,[18] our recent research indicates Irish farmers responded positively to a farmer-specific 6-week, group-based, physical activity and health education intervention (75% adherence rate, $n = 30$).[6] The objective of the aforementioned 6-week,

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community-based program was to promote positive lifestyle changes among farmers to improve health and wellbeing through the provision of practical health information and instructor-led multimodal exercise training. The intervention involved two 60-minute circuit-based exercise training sessions and one 60-minute health education workshop per week on topics such as exercise, healthy eating, and metabolic and cardiovascular health. Group-based health interventions involving participants with mutual interests have been shown to be associated with greater health outcomes than individual based interventions as they increase sense of belonging and provide opportunities for social interaction. [19–21] This is particularly important for populations at risk of social isolation such as farmers.[16]

Community-based health promotion for farmers presents opportunities and challenges for both farmers and service providers. As no qualitative health research currently exists among farmers in Ireland, service providers are unaware of how best to support farmer health.[18] There has been more farmer-specific approaches to health promotion in Ireland in recent years; for example, farmer-specific health information resources have been created,[22,23] cardiovascular health screening at marts are available,[24] and the provision of a 6-week community-based physical activity and health education program.[6] However, the latter two approaches have been reported as single occasions in the literature, and long-term farmer health promotion strategies are warranted. Farmers views on lifestyle intervention is currently unknown. The purpose of this study was to qualitatively analyze the impact of the previously mentioned 6-week physical activity and health education intervention on farmer health and to investigate how best to support this cohort moving forward.

Methods

Intervention, participants and recruitment

Thirty Irish farmers completed a 6-week community-based physical activity and health education program from October to December 2019.[6] The community-based program involved two weekly 60-minute circuit-based multimodal exercise training sessions and one weekly 60-minute health education session led by a clinical exercise physiologist, qualified exercise strength and conditioning instructor, registered dietitian, and registered associate nutritionist. Participants who gave permission to be contacted for follow-up research purposes received one email and one text message in December 2020 to inform them about this current qualitative study (12 months after completion of the 6-week program). A total of 14 farmers who completed the 6-week community-based physical activity and health education program took part in this study, to give a response rate of 46.7%.

Data collection

Questionnaire

Participants were asked to complete an online anonymous questionnaire prior to participation in the interview or focus group. This was used to determine participant gender, age, weight, height, occupation status, motivation to make healthy lifestyle changes, if farmers would have attended the program if it was not specifically aimed at farmers, satisfaction with the 6-week lifestyle program, lifestyle changes, if lifestyle changes were sustained after the initial 6-week program, additional supports needed to sustain behavior change, the ideal duration of time for a lifestyle program, and if they had any additional information for future farmer lifestyle programs.

Focus groups/interviews

Qualitative data were collected through semi-structured online interviews and focus groups that were digitally recorded and transcribed verbatim using Zoom (Zoom Video Communications, California, USA) and Microsoft Word, respectively. The interviews and focus groups lasted between 15 and 45 minutes and were moderated by the lead author (RK) who was trained by experts in qualitative methodology (LK, PD). A moderator guide was created that included a list of questions to be asked to participants to guide the focus groups and interviews (Supplementary File 1). Farmers were asked about their thoughts on the health needs of Irish farmers, the content of the 6-week program, and how to engage farmers to take part in future lifestyle programs. A rapport was established between the first author and participants during the initial 6-week program, which created an environment for farmers to trustingly express their own thoughts and opinions.

Thematic analysis

The six phases of reflexive thematic analysis as reported by Braun and Clarke was used, specifically (1) familiarization of the data[25,26]; authors actively read and reread the transcripts to become familiar with the data, (2) coding; all authors independently coded a transcript and then met to discuss the codes to confirm reliability and consistency in interpretation. The remaining transcripts were coded by RK and checked by LK and PD. This resulted in a list of codes representing recurring ideas in the data. Microsoft Excel was used for coding as the number of interviews and focus groups were small enough not to require specialized qualitative analysis software, (3) generating initial themes; the coded data were then assessed to identify potential themes and sub-themes following an inductive process by RK (4) developing and reviewing themes, (5) refining, defining, and naming themes; the themes and subthemes were reviewed and approved by all authors and supporting quotes for themes and sub-themes were identified, and (6) writing the manuscript. Reporting transparency was assessed using the Standards for Reporting Qualitative Research checklist.[27] (Supplementary File 2).

Ethics

Ethical approval for this study was obtained from the Research Ethics Committee at the Atlantic Technological University Sligo (reference number 2,020,029). Informed written consent was obtained prior to the start of each interview and focus group.

Results

Participants

There were 14 out of 30 farmers who completed a 6-week community-based physical activity and health education program and took part in this study, giving a response rate of 46.7%. Three online focus groups ranging in size from three to six participants and two individual interviews (due to an inability to participate in the focus groups on the assigned dates) were conducted. The participant characteristics for the 13 participants who completed the anonymous online pre focus group questionnaire are outlined in Table 1.

Themes

Two main themes emerged from the focus groups and interviews; (1) views on health and lifestyle behaviors, and (2) views on the program, specifically the barriers, facilitators, and recommendations for future lifestyle programs aimed to improve farmer health.

Views on health and lifestyle behaviors

Recognition of importance of lifestyle behaviors (n = 10)

Nutrition and physical activity were recognized as important aspects of health as a farmer. Farming is a challenging occupation often comprising of long working hours and unpredictable occurrences. These stressors in addition to the scarcity of farm laborers are reasons why farmers consider their health to be important.

> You are so busy, and labor is so scarce that you really need to be in tip top shape and very focused and very organized. You have to have the nutrition right and the physical exercise right. (Participant 1)

Farming as a changing profession (n = 10)

As most farmers in this study were middle-aged adults, participants reflected on the changes to the farming profession. It was recognized that modern farm work is more sedentary due to administrative duties and motorized transport. Farmers acknowledged that there is a misconception that farmers are active and fit because they work outdoors.

> You do less physical work and more office work more driving work more so than actual physical work. (Participant 2)

> We definitely think we are in better shape than what we actually are. . .you know, sitting in a tractor doing routine work is not. . . getting the fitness that you need. (Participant 3)

Tendency to seek health advice for treatment purposes rather than for preventative reasons (n = 5)

Participants recognize the importance of health and lifestyle behaviors, and while some said they go to their general practitioner annually for a health check ($n = 3$), most farmers do not actively seek medical advice unless treatment is required.

Table 1. Participant characteristics ($n = 13$).

Gender	Male ($n = 12$) Female ($n = 1$)
Age in years (mean±SD)	53.5 ± 6.5
Weight in kilograms (mean±SD)	89 ± 14.8
Height in meters (mean±SD)	1.75 ± 0.06
Farming status	Full-time ($n = 10$) Part-time ($n = 3$)
Motivation to continue to make lifestyle changes	Highly motivated ($n = 1$) Motivated ($n = 8$) Somewhat motivated ($n = 4$)
Would you have joined the program if it was not specifically aimed at farmers?	Yes ($n = 7$) No ($n = 6$)
Satisfaction with lifestyle program	Very satisfied ($n = 13$)
During the 6-week program did you change any lifestyle behaviors?	Yes ($n = 11$) No ($n = 2$)
Lifestyle changes made during the program ($n = 11$)	Increased physical activity ($n = 9$) Dietary changes ($n = 9$) Reduced alcohol consumption ($n = 4$)
Were the lifestyle changes sustained after the 6-week program? ($n = 11$)	Yes ($n = 7$) No ($n = 4$)
Reasons why changes were not sustained after the 6-week program	COVID-19 lockdown ($n = 2$) Lack of support ($n = 1$) Not indicated ($n = 1$)
Recommended supports to sustain behavior change post program ($n = 8$)	Group exercise classes/programs ($n = 6$) Motivation and continuous assessment ($n = 1$) Maintain communication with group leaders or some other members of the group ($n = 1$)
In your opinion, what is the ideal duration of time for a farmer lifestyle program? (weeks)	6 weeks ($n = 5$) 8 weeks ($n = 3$) 10 weeks ($n = 1$) 12 weeks ($n = 1$) 52 weeks ($n = 1$) Ongoing ($n = 2$)
Additional information that would be useful to include in farmer health programs	Home-based exercise circuits/plans ($n = 2$) Regular newsletter with links to articles and tips ($n = 1$) Back care ($n = 1$) Psychological ($n = 1$) More nutrition information ($n = 1$)

*One participant did not complete the anonymous online pre focus group questionnaire.

> Generally, farmers don't seek any help or very little anyway. (Participant 4)

> It would only be when you get an injury that you'd seek health advice...It's only if it stops you from doing something that you decide I better get this looked at. (Participant 5)

Lack of access to farmer-specific health information or programs (n = 5)

Farmers stated that there is no specific farmer health information or lifestyle programs available to them in the community. Older farmers described feeling excluded from sporting facilities because of their age.

> I don't know whether it's existent or limited, maybe to some degree what information is out there. It's general information. It wouldn't be specific to the farming community. (Participant 9)

> When you cross the 50 line there's no sport out there really that you can take part in as regards the team sports or anything like that. (Participant 12)

Views on the programs including barriers, facilitators and recommendations for future lifestyle programs aimed at improving farmer health

Barriers

Time of year (n = 7)

The main barrier for farmers to join a lifestyle program was time of year. It was recognized by farmers that Autumn and Winter months would be the most suitable time for community-based lifestyle programs as farming work is less demanding during these seasons:

> In the summer and in the spring it's very busy.... with labor you see it's so hard...you can't get labor so I have to do it myself...spring time here would be a total no go for me but what I find is I have to be actually in good shape coming into the spring and rested coming into that February period... because eh at that time of year I will be doing eh 17, 18 hour days. (Participant 1)

> From September onwards, be grand...I find that sort of from the end of January on when you have cows calving and stuff like that, it's a bit more awkward. (Participant 5)

Lack of support to continue flexibility exercises (n = 6)

Farmers stated that they did not maintain increased physical activity levels because *"it's not that easy to do these exercises and everything on your own at home" (Participant 13)*. The lack of support to do the flexibility exercises in particular was mentioned. The COVID-19 pandemic was a barrier for some participants to continue increased physical activity levels ($n = 2$):

> Subsequent to the six weeks, I would have kept the exercise going. I know we followed on once a week with a class, but I started to do some running again in January. But then COVID struck and that all unfortunately stopped. (Participant 9)

Facilitators

Social and physical health benefits (n = 7)

When asked about their motivation for joining the program, many farmers mentioned the social health benefits. The program provided an opportunity for farmers to network. This interaction provided a sense of belonging to members of the farming industry.

> People felt better from a social point of view from having interaction with similar type people in that group and it was incredible...everybody was delighted to go to those classes. (Participant 6)

> The social aspect was more than I ever expected I would get out of the course. And again, talking to my peers in the farming community and you know, picking up a couple of tips as well about farming. (Participant 7)

Farmers also reported physical health benefits, specifically improved fitness and flexibility, and the impact this had on wellbeing.

> I felt the better of it...now there is no issue on long walks and stuff like that... I loved the exercise and the classes and the stretches in particular. I thought the stretches even more so than the physical activity were fantastic. (Participant 8)

> I'd suffer a little bit from pains and aches, and they all seem to go away when I was doing the stretching exercises... I felt a lot better in myself and everything, so I did that means an awful lot to me. (Participant 13)

Farmer-specific program (n = 5)

The farmer-specific nature of the program was another motivator for joining the program as it provided cohesion. Farmers felt comfortable engaging in the exercises because there was no judgement in comparison to *"a gym environment" (Participant 9)*.

> Everybody was from the same background, and nobody actually cared what anybody else looked like, or if they couldn't run they didn't care because we were all the same, and that's what I thought was the key to the success of it. (Participant 6)

Recommendations

Increased availability of lifestyle programs suitable for all abilities (n = 8)

There is a demand for lifestyle programs as farmers *"have been talking to people who are very keen and interested in what I was doing"* (Participant 4). However, there needs to be an increased availability of supervised lifestyle programs in local areas that are suitable for different fitness abilities. In addition, follow-up support is needed to encourage sustainable behavior change. Farmers suggested that physical activity and health education programs should be continuous and more widely available to farmers:

> There is a need to start a program like that again. (Participant 1)

> Maybe more local ones...I suppose I would love to be able to go back to do a couple of weeks every now and then because this would focus your mind and

> make you realize that I need to keep this up rather than just doing the six weeks and forgetting it. I think a refresher or some something like that would be very helpful. (Participant 11)

Despite there being a greater awareness of online programs, there was a mixed response from farmers. Although *"there's less traveling involved and you don't have to go out in the cold nights" (Participant 10)*, most farmers were hesitant of online programs due to the lack of social interaction and potential technical difficulties:

> I think the social activity was so important. I think from a mental point of view that your meeting other people they're having the chat after or before it or even during it having the laugh. I think that if it's online that it can't be as good. (Participant 12)

Increased support from farming organizations (n = 7)

Although all farmers stated that cost would not impact their decision to join a lifestyle program "*for all the benefits you're getting*" (Participant 10), farmers believe that organizations that support farmers should fund farmer health programs and increase awareness about the importance of farmer health:

> We came from all over the country…*names of farmer support organizations* like should be able to inform and get more local halls. (Participant 10)

> If we could get the information or the word out through the organizations that the farmers are familiar with and that they trust, they might be more inclined to attend. (Participant 7)

Discussion

The current study findings provide an insight into the impact of the previously mentioned 6-week physical activity and health education program in addition to practical recommendations on how to engage Irish farmers in future lifestyle programs, which has not been previously addressed in the literature. Most farmers in our study were middle-aged males who recognized the important role nutrition and physical activity play in the quality of life and health of Irish farmers. Interestingly, it seems for some farmers the stressors associated with farming act as a catalyst for engaging in positive lifestyle behaviors. Farmers recognized that farm work has become more sedentary due to increased administrative duties and the availability of motorized transport and noticed poor fitness, which became apparent to them during the structured exercise sessions. Improved fitness was a benefit expressed by farmers after completion of the 6-week physical activity and health education intervention, which can reduce the physical stress related to farming activities and the risk of developing chronic diseases, in addition to other well-known physical and mental health benefits.[28] The main benefits reported were improved fitness and flexibility and the positive impact this had on overall wellbeing. It may seem improved fitness was correlated to improved wellbeing due to the well documented moderating and mediating effects of increased physical activity on self-concepts and self-esteem[28]; however, an additional explanation for improved wellbeing may be the social support farmers received while attending the community-based program, as social support has been identified as a predictor of subjective wellbeing for men living in rural communities. [29–31] The importance of community and environmental contexts on wellbeing are well established, whereby community cohesion, social connectiveness, and supportive relationships act as potential buffers against health risk behaviors.[32] Participants described feelings of belongingness, purpose, and support and reported the social health benefits obtained was the main facilitator of the 6-week lifestyle program.

Most participants stated they made changes to their lifestyle during the 6-week program, mainly by increasing participation in physical activity (n = 9) and by making dietary changes (n = 9). Almost 64% (n = 7) of farmers stated these changes were sustained after 12 months. The COVID-19 pandemic and the lack of support to continue exercising were identified as reasons as to why lifestyle changes were not sustained after the 6-week physical activity and health education program. This finding is particularly concerning, as Irish farmers were recently identified as being highly susceptible to adverse COVID-19 outcomes due to the high prevalence of underlying health conditions in this population.[33] The authors in

that study highlighted the importance of providing health and wellbeing resources to farming communities that encourage positive lifestyle behaviors and support resilience. In our study, farmers expressed feelings of exclusion, as they believe there is limited access to farmer-specific health information and non-existent access to farmer-specific lifestyle programs. However, farmer-specific health resources have been created for Irish farmers, including "*Coping with the Pressures of Farming*" [22] and "*Staying Fit for Farming*",[23] suggesting these resources are not effectively promoted to farmers. Although farmers believed they have limited access to farmer health resources, it should be noted most farmers stated they tend to seek health advice for treatment purposes rather than for preventative reasons. This suggests members of populations are less likely to be aware of farmer-specific health resources, because they do not actively seek them. Farming is typically a male-dominated profession, and this was reflected in our study (92.3%). It is widely known males are less likely to seek medical advice and engage in health promotion behaviors and interventions in comparison to females.[14,15,34] Therefore, health promotion strategies should aim to specifically target farmers to increase awareness about the beneficial impact positive lifestyle behaviors can have for the prevention, management, and treatment of noncommunicable diseases, as they are more susceptible to them. Farmers unanimously agreed farming organizations should promote positive health and wellbeing, which suggests farmers want health information to be delivered to them from familiar sources and in familiar environments.

The provision of group-based exercise classes and/or programs was the most popular recommendation to support sustained behavior change. Community-based networking has been identified as being important for the social and mental health of farmers.[29,35] When farmers were asked their opinions of online programs, there was a mixed response. Although there is less travel involved, most farmers were hesitant of online programs due to the lack of social interaction and potential technical difficulties. It is believed the farmer-specific, community-based, free-living nature of this community program was pivotal for the high adherence to the program (75% adherence rate).[6] These findings suggest farmers are more likely to engage in health promoting behaviors when appropriate approaches to engagement are utilized in an environment that is familiar and accessible.

Our findings highlight the increased need for farmer-specific lifestyle programs in Ireland. Although health education and physical activity sessions are important, it is important to motivate, enable, and support farmers through the provision of seasonally appropriate community-based programs to promote social interaction and to foster cumulative advantage in health and wellbeing. According to the COM-B model, there are three conditions that largely influence behavior: capability (C), opportunity (O), and motivation (M).[36] All three conditions must be met to influence individual behavior, more specifically referring to an individual's physical and social capability, social and physical ability to investigate new opportunities, and self-motivation. We can aim to influence farmer health by improving capability by increasing health knowledge through farming organizations and farmer-specific strategies (such as farming news portals). We can motivate through the provision of incentivized evidence-based lifestyle programs that incorporate established behavior change techniques and disseminate farmer personal experiences of lifestyle programs. We can provide opportunities to engage in farmer-specific community-based programs, as this may reduce the stigma associated with health interventions and promote social interaction and a sense of belonging among those with mutual interests, which is imperative for those at risk of social isolation.[37]

Limitations

The results of this study should be interpreted considering some limitations. Interviews and focus groups are subject to recall bias and may potentially provide skewed opinions of this lifestyle program. Most farmers in this study were motivated to make lifestyle changes and were "very satisfied" with the lifestyle program they completed. Therefore, the current study findings may not reflect the opinions of farmers who were not motivated to make lifestyle changes or who were not satisfied with the program. Furthermore,

a small purposive sample was used, which limits the generalizability of our study findings. It is recognized in the literature that some participants may not feel comfortable communicating honestly in interviews and focus groups especially with interviewers of a different gender.[38] However, the authors of this study do not believe this was a limitation, as participants were familiar with the interviewer, as they were the main point of contact during the initial 6-week lifestyle program. Additionally, participants provided detailed responses indicating they felt comfortable during the interviews and focus groups.

Conclusion

Our findings highlight the increased need for farmer-specific lifestyle programs in Ireland. Lifestyle programs should not be time intensive and should consider occupational factors, as farmers have limited time to engage during busy seasons (Spring and Summer). Farmers suggested the minimum duration of a lifestyle program should be 6 weeks, with some farmers suggesting longer durations; however, future research should aim to determine the optimal length of lifestyle intervention for farmers and the cost effectiveness of same. It is important that the motivators, barriers, and recommendations from farmers in this study are considered in the design and development of future lifestyle programs to enhance program effectiveness. Capacity building is important for long-term sustainability of health promotion programs, for example, integrating health promotion programs into existing agricultural support systems. Working in partnership with government agencies, agricultural organizations, healthcare providers, and community groups has the potential to enhance the effectiveness of health promotion programs by leveraging combined resources and expertise to improve farmer health. Interventions that are farmer-specific, community-based, and feasible within the context of available resources may be effective in improving farmer health.

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