

## Research Paper Summary

### Health-related quality of life within agriculture in England and Wales: results from a EQ-5D-3L self-report questionnaire

**Short title:** Health related quality of life in agriculture

**Key words:** quality of life; mental health; physical health; wellbeing; farmer

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#### Practical point

It is known that there are mental and physical health problems among the farming community. However, there is limited evidence available on the overall health status of this population. This study utilised a survey to provide a standardised measure of health-related quality of life. Results suggest a high level of physical and mental health problems, especially pain/discomfort and anxiety/depression, within the farming community.

#### Background

High rates of mental and physical health problems have been identified among agricultural populations globally. In the UK, agriculture is consistently identified as one of the poorest performing sectors in terms of suicide and physical injury. Agriculture, Forestry and Fishing had the highest rate of work-related musculoskeletal disorders, fatal injuries, and non-fatal injuries of all sectors between 2016/17 and 2020/21 in GB. Additionally, in England, it is estimated that males in elementary agricultural occupations have a suicide risk 1.9 times higher, and those in skilled agricultural occupations 1.7 times higher, than national average.

A range of different factors have been identified as contributing to poor health in farming populations. These include financial difficulty; pressures associated with paperwork, regulation and inspection; loneliness and isolation; work demands/long working hours; impacts of climate change

and extreme weather; pesticide exposure; animal disease; and social, cultural and practical barriers around seeking help for health issues.

### Work undertaken

To identify common sources of stress and explore perceptions of current farm business performance, challenges and opportunities, a survey of people living and working in agriculture (n =15,296) was carried out in 2021. The survey looked at the agricultural population of England and Wales.

A survey instrument (known as EQ-5D-3L) which provides a standardised measure of health-related quality of life was used. This includes a descriptive system questionnaire and a visual analogue scale (EQVAS). The descriptive system asks respondents to indicate whether they have no, some or extreme problems in relation to five health dimensions (mobility; selfcare; performing usual activities; pain/discomfort; and anxiety/depression). Responses to the descriptive system can be converted into index values, providing a single aggregated measure of health for each individual, based on their reported level of problems with the five health dimensions. The index value is calculated “according to a set of [country or region specific] weights that reflect, on average, people’s preferences about how good or bad the state is” and represents the societal perspective on health. The EQVAS requires the respondent to self-rate their health on a vertical visual scale (0 = the worst and 100 = the best health they can imagine) and represents their own perspective on their overall health.

Responses were received from all adult age groups but were skewed towards 55-64 and 65-74 age groups. Given the average age of farmers in the UK is 60, this was expected. The mean age of survey respondents was 60, though this varied with gender, with female respondents being on average younger (56 vs. 61). The proportion of male respondents (76%) compared to females (23%) also reflected the gender balance in the wider UK farming population, where 73% of those employed in agriculture, forestry and fishing are men and 27% are women.

Age and gender had a unique, statistically significant effect on all health dimensions in this study. Though models assessing the influence of age, gender, respondent role, farm type, farm size and farm tenure found all to have a significant effect when the other factors were controlled for (i.e.

taking into account interrelationships between characteristics, such as arable farms being on average larger than livestock farms).

**Mobility:** 24% of survey respondents reported “some” or “severe” mobility problems, with respondents aged 65 or over more likely to report issues than younger respondents. Within each age group, a lower proportion of respondents reported mobility problems compared to the UK population (according to available data on UK norms) except in 18-24 and 35-44 age groups where there was not a statistically distinguishable difference. In the 55-64 age group, 20% of respondents reported problems compared to 25% of the UK population. Modelling suggested men were 1.12 times more likely than females to report mobility issues.

**Self-care:** Reported problems with self-care were low, with only 4% of respondents reporting some or severe problems, with respondents younger than 65 less likely than expected, and those in older age groups more likely than expected to report issues. Modelling suggested men were 1.29 times more likely to report self-care issues than females.

**Usual activities:** 21% of respondents reported some or severe problems with performing their usual activities. As with mobility and self-care problems, respondents younger than 65 were less likely than expected, and those in older age groups more likely than expected to report problems performing their usual activities. Compared to UK data, results indicated differences between the agricultural and wider population in some age groups. The proportion of respondents aged 18-24 reporting problems with usual activities was greater than in the UK population (14% compared to 5%). The proportion of respondents in the 75+ age group reporting problems was also higher than the wider population (38% compared to 34%). However, a smaller proportion of respondents aged 55-64 reported problems compared to the UK population (18% compared to 25%). Overall, males were 1.14 times more likely than females to report problems with performing usual activities.

**Pain/discomfort:** 52% of respondents reported experiencing either ‘moderate’ or ‘extreme’ pain/discomfort when completing the survey. Respondents in age groups under 55 were less likely than expected, and those aged 65 and over more likely than expected to report problems. The percentage of the population reporting pain and discomfort was markedly different between the farming community and the public, particularly within the 25–54-year-old age groups, where 39% of respondents aged 35-44 reported pain/discomfort compared to 23% within the general population.

Males were around 1.22 times more likely than females to report problems with pain/discomfort.

**Anxiety/depression:** 31% of all respondents reported some or severe problems with anxiety/depression at the time of survey. In contrast to the other health dimensions, younger age groups (below 65) were more likely than expected, and older age groups (65 and above) less likely than expected to report problems. At least a third of respondents aged 18-64 reported being moderately or extremely anxious or depressed. As with other parameters, there was a large difference between the farming community in this survey and the wider UK population, with 40% of 18–24-year-olds reporting anxiety/depression compared with 12% in UK data.

## Conclusions

Overall, this study investigating health related quality of life of farmers, farm families and agricultural workers in England and Wales suggests concerning levels of health problems of those living and working in agriculture. For example, over half (52%) of respondents reported having moderate or extreme pain/discomfort and almost a third (31%) reported some or severe problems with anxiety/depression. However, authors note that the timing of the survey, during the COVID-19 pandemic, could impact responses, due to increased levels of isolation and reduced access to healthcare. Despite this, authors conclude that this is unlikely to account for all differences between the farming population and national data. Despite the negatives, there were some positives identified in the study – for example, fewer problems with mobility and self-care than the wider population, especially in older groups.

This study and its outputs suggest there is a strong need to understand and to then address physical and mental health issues among people living and working in agriculture. Authors note that the results should be actioned upon, ensuring a sustainable and resilient food system with healthy agricultural workers, able to maintain and improve production without negatively affecting themselves and their families.

## Reference

Wheeler, R. and Lobley, M. (2022). Health-related quality of life within agriculture in England and Wales: results from a EQ-5D-3L self-report questionnaire. *BMC Public Health* 22: 1395

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