Social prescribing is the use of non-medical interventions, such as community resources, to prevent health issues and address existing conditions. It is becoming increasingly common and, although it was initially conducted by doctors, more recently this has been extended to include other clinical staff members, including nurses (Chatterjee et al, 2018).

The range of activities prescribed is broad and may include:
- Nature-based activities, such as walking groups and green gyms (Leavell et al, 2019; Chatterjee et al, 2018; Thomson et al, 2015);
- Exercise, for example, dance or swimming (Chatterjee et al, 2018; Thomson et al, 2015);
- Activities that attempt to reduce isolation and link people with others in their local communities (Chatterjee et al, 2018; Thomson et al, 2015).

A series of reviews have found somewhat mixed results on social-prescribing activities: some studies have reported a range of positive outcomes for participants – including improved mood and psychological wellbeing and reductions in anxiety and depression – while others have not (Husk et al, 2020; Pescheny et al, 2020; Leavell et al, 2019; Thomson et al, 2015). However, not all studies have been found to have used robust methodologies (Chatterjee et al, 2018; Bickerdike et al, 2017) and a further complicating factor is that it is rare for patients to be referred to receive only a single therapeutic approach or to undergo an activity with only a single element (Polley et al, 2017).

Three activities that might be socially prescribed and that commonly interconnect are:
- Visiting green spaces;
- Human social interaction;
- Human-animal interaction (HAI).

Several recent reviews have found that accessing green space can have a positive impact on the mental health of adults and children (Dobson et al 2019; Wendelboe-Nelson et al 2019; McCormick, 2017). Similarly, social relationships have been found...
to be important for the psychological well-being of the general population as well as for particular groups, such as people with disabilities (Tough et al, 2017); it also appears to be the case for social interactions with more-distant acquaintances (Sandstrom and Dunn, 2014). HAI includes watching, petting and playing with animals; a literature review by Krause-Parello et al (2019) found that HAI had both psychological and physical benefits. Pet therapy, which uses such interactions for a therapeutic purpose, has been found in a recent meta-analysis to result in reduced anxiety and stress (Ein et al, 2018).

All three activities display a positive effect on affective or emotional wellbeing. However, because they are likely to co-occur (Dadvand et al, 2016; Beetz et al, 2012; Sugiyama et al, 2008), there may be an interaction effect between their benefits (Maller et al, 2009) and this co-occurrence makes it difficult to know which aspects of any given intervention are most effective. This article discusses a research study investigating whether HAI, social interaction and being in green spaces interact to improve emotional wellbeing in visitors to an inner-city farm – and which element makes the greatest contribution. The aim was to help inform nurses when they are deciding which type of socially prescribed activities may be most beneficial.

Survey method
We used an observational approach to investigate the overall effect on emotional wellbeing of visiting an inner-city farm in North East England, as well as the interactional effect between HAI, being in green spaces and socialising. The farm allows visitors to access gardens and a cafe, to observe, touch, feed and interact with animals such as cows, sheep and pigs, and to pet smaller animals, such as rabbits.

The participants were 51 visitors to the farm (31 females and 20 males), with a mean age of 25.6 years. They had not been referred as part of a social-prescribing initiative. Ethics approval for the study was obtained from Northumbria University’s ethics committee and all participants consented to take part.

To establish participants’ psychological wellbeing, we measured their mood using Watson et al’s (1988) Positive and Negative Affect Schedule (PANAS). This is a valid and reliable measure of positive mood state (PA) and negative mood state (NA); a higher PA and lower NA score indicates better mood.

We designed a survey for the purpose of the study; in addition to asking participants for basic demographic information (age and gender), it asked them to list the activities in which they had taken part during their visit to the farm and how long they had spent on each one. The activities listed on the survey were:

- Animal time (to indicate HAI) – watching, petting or interacting with the animals;
- Garden time (to indicate time spent in green space) – walking through, and sitting down in, the gardens;
- Cafe time (to indicate time spent in human social interaction) – time spent engaging in more-formal socialising, while eating or drinking something in the farm’s cafe.

Visitors to the farm were provided with information about the study and invited to participate when they entered the farm. Those who agreed to participate were asked to provide written consent and to complete the activity survey during the course of their visit. They were also asked to complete the PANAS on entry to and on leaving the farm, scoring their PA and NA out of a possible total of 50.

Participants returned the completed forms to the researcher as they left the farm. No identifying details were gathered and, to ensure they remained anonymous, participants were asked to select their own code word and write it on their survey and two PANAS forms. This allowed us to match their PANAS response on farm entry and exit, and to collate them with their activity survey.

We obtained participants’ changes in mood by calculating the difference in their PA and NA scores on farm entry and exit. Multiple linear regression analyses were used to assess whether the activities (animal time, cafe time and garden time) predicted PA and NA change.

Survey results
The activity participants spent most time engaged in was human interaction in the cafe (mean [M] = 19.3 minutes, standard deviation [SD] = 7.7 minutes); this was followed by interacting with the animals (M = 14.3 minutes, SD = 9.9 minutes), then spending time in the gardens (M = 8.7 minutes, SD = 8.9 minutes).

A statistically significant increase was found in PA scores on leaving the farm (M = 33.3, SD = 5.6) compared with entering (M = 28.2, SD = 5.6); t(50) = -5.6, p<0.001. Similarly, a statistically significant decrease was found in NA scores on leaving the farm (M = 10.8, SD = 1.7) compared with entering (M = 12.7, SD = 3.4; t(50) = 3.9, p<0.001) (Fig 1). These results indicate that, regardless of the activities in which participants engaged, visiting the farm, on average, increased positive mood and reduced negative mood.

The multiple linear regression for PA score change was statistically significant (f (3, 79) = 3.6, p<0.001; R² = 0.19). Only cafe time statistically significantly predicted PA change (β = 0.37, p = 0.002), indicating this was the main contributing factor towards the increase in PA after visiting
the farm. This suggests the time participants reported as being spent socialising while eating or drinking in the cafe independently predicted improved mood as measured by the PANAS score changes. However, none of the activity scores significantly predicted NA change.

Discussion

Visiting the farm, as an overall activity, significantly increased positive mood and decreased negative mood. This is consistent with previous research that also found a statistically significant positive effect of social factors on mood in green spaces (Dadvand et al, 2016; Sugiyama et al, 2008).

Our results indicated that HAI and time spent in green spaces did not independently statistically significantly predict change in positive or negative mood. However, if the beneficial effect of green spaces and HAI is influenced by their association with increased social interaction – as suggested by previous research (Dadvand et al, 2016; Beetz et al, 2012; Sugiyama et al, 2008) – then HAI and visiting green spaces could be used to help promote social interaction for adults who are socially isolated or withdrawn.

The results of our study may also have been influenced by external factors such as the weather or season. It took place in the winter and, as research has found that increased green space is related to larger positive effects on psychological wellbeing (Sugiyama et al, 2008), the reduction in vegetation caused by the season could be why time spent in the garden did not independently statistically significantly predict positive or negative mood.

A limitation of the study was that its participants were general visitors to the farm, rather than people referred as part of a social-prescribing initiative. However, it involved activities that are commonly part of such interventions and the results are likely to be applicable to clinically referred populations though further research is needed to confirm this.

A further limitation is that, while participants were prompted to note their main periods of human interaction under the category ‘cafe time’, it is likely they also engaged in some form of human interaction during the garden and animal activities.

The study had a small sample size, which limits the results’ generalisability.

Implications for nurses

Despite the limitations described above, the study suggests social interaction was an important predictor of improved positive mood, which is consistent with previous research that suggests social interaction may enhance the benefits of other activities. With their increasing role as social prescribers, nurses may wish to consider interventions that are likely to maximise the opportunities for social interaction – and thereby increased positive mood – for patients who are withdrawn or isolated. NT

References


