Combining garden therapy and supported employment – a method for preparing women on long-term sick leave for working life

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Women are overrepresented among the group people suffering from long-term illness. In addition to their illness, suffering long-term sick leave leads to economical restraints as well social distress. There are gaps in our understanding of the challenges these women face. There is also lack of knowledge about how these challenges can be effectively addressed in rehabilitation. This deficiency is problematic from an ethical, justice and a caring perspective. In this study, changes in health-related quality of life (HRQoL) among women on long-term sick leave were investigated during and after participating in a rehabilitation programme combining two validated methods, Garden Therapy and Supported Employment (SE). The study also discusses difficulties in realising research related to vulnerable under-privileged people. From a population of 329 women who had reported their interest to participate, 245 were randomised to the programme. Of these 144 accepted participation in the research project and of these 123 women accepted to answer the SF-36 questionnaire. The participants were between 21 and 62 years with poor physical and mental health. They had received public financial support from <1 year to >10 years. The SF-36 measurement was carried out at baseline, after completion of Garden Therapy and after completion of SE. The results are based on data of respondents who participated at all the three occasions (n = 52). When comparing HRQoL baseline with the following occasions, the participants’ General Health (GH), Vitality (VT), Social Functioning (SF) and mental health had improved significantly. The Four Leaf Clover (FLC) programme could be an appropriate method for reducing socially induced suffering. However, to conduct intervention studies where vulnerable persons are involved, it is of vital importance to consider whether the participants have the strength to complete the intervention.

Keywords: women, vulnerability, long-term sick leave, health-related quality of life, garden therapy, supported employment.

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Introduction

The WHO has emphasised that there are major gaps in our understanding of the challenges faced by women in relation to health and how these challenges can be effectively addressed (1). Being underprivileged due to lack of income, employment, education, housing, social connectedness, status and power constitutes an increased risk of poor health characterised by multimorbidity, premature mortality and poor quality of life. Being underprivileged thus implies vulnerability (2). Statistics indicate that morbidity and mortality are more prevalent among women than men (3, 4). Moreover, unemployment may lead to economic dependence and the risk of social isolation (5). For these reasons, long-term sick leave can be seen as an additional risk factor for women with complex and chronic health problems (5). These women can thus be considered a vulnerable and underprivileged group, and the challenges they face to regain health require further investigation in order to be effectively addressed (1, 2, 4, 6).

Long-term illness among women is related to a deterioration in physical and/or mental health and has been explained by work overload, stress and poor working conditions in combination with excessive home and family demands (7, 8). Depression among women is related
to chronic strain and a low sense of control. Moreover, depression in combination with musculoskeletal pain and cognitive difficulties related to memory, concentration, decision-making and/or performing tasks occasionally occurs (9). Exhaustion and burnout syndrome, cognitive disability and a low energy level are symptoms of long-term stress (10–12), making early detection and appropriate treatment essential (13). A Swedish study revealed that anxiety, depression and stress were lower among people on part-time or no sick leave compared to those on full sick leave. The authors thus stress the importance of a comprehensive investigation of patients with symptoms of musculoskeletal disorder including anxiety and depression, as a basis for an appropriate rehabilitation plan (5).

Since 1978, the primary goal of public health has been equity (14). Therefore, development of effective health promotion, disease prevention and rehabilitation methods for vulnerable groups should be considered an urgent issue. The caring needs of such vulnerable individuals probably differ from those of nonvulnerable groups. However, because of the ethical, practical and methodological difficulties involved in conducting research in vulnerable groups, there is a risk of further discrimination (2, 6, 15). Barriers include the sampling process, which implies categorising participants, and therefore could be experienced as stigmatising. Schrems encourages researchers to make use of ongoing interventions in order to find opportunities for data collection. In addition, the outcomes of interventions in clinical practice can be validated (6). In this study, we have investigated the impact of a rehabilitation programme, specially designed for women on long-term sick leave, with the aim of improving their health-related quality of life (HRQoL).

The four-leaf clover project

In order to reduce long-term sick leave among women, the Swedish government allocated about 2.75 million euro for the development of methods to facilitate women’s return to work. The methods were to be based on local conditions and involve key local actors, for example the Social Insurance Agency, the Job Centre, Primary Health Care and the Social Service (16). The Four-Leaf Clover (FLC) was one of four projects to receive funding. The Swedish Social Insurance Agency evaluated the effect of the funded projects by measuring changes in work-related activities. In addition to the evaluation performed by the Swedish Social Insurance Agency, the leaders of the FLC project were interested in achieving possible improvements in the women’s HRQoL. They therefore contacted the university to assist them in this investigation.

The FLC project was conducted between 1 January 2010 and 30 June 2011. Its aim was to combine two validated methods: The Alnarp Rehabilitation Garden (ARG), a horticultural therapeutic method, combining the use of restorative natural areas with traditional horticultural therapy and occupational therapy (17, 18), and Supported Employment (SE) (19, 20). Horticultural therapy such as the ARG is usually offered to people suffering from stress-related exhaustion, depression, anxiety and pain (21). A key component is the encounter between the client and therapists as well as between the client and the garden. Physical work is combined with relaxation exercises, sometimes in groups (17). Horticultural therapy has been shown to have positive effects such as improved concentration, attentiveness, stress management and memory, and when used in group-based settings, to enhance life satisfaction, self-confidence and well-being (22–24). Research has also demonstrated that depression severity was significantly reduced during horticultural therapy, that an improvement was sustained at the three-month follow-up (25) and that an aesthetic and safe environment promoted feelings of meaningfulness, involvement in activities and enjoyment (26). Moreover, horticultural therapy implies working in groups, with the aim of promoting opportunities to share and reflect over personal experiences. Horticultural therapy has been found to result in positive changes in quality of life (22, 23).

SE is an evidence-based method aimed at enhancing employment outcomes. It has been recommended by the European Commission as a means of helping people with disabilities and other disadvantaged groups to obtain gainful employment (27). SE includes a job coach with the necessary competence to guide and support clients in their job search process. It is recommended that the job search should start as early as possible in the rehabilitation process and continue for as long as the client requires support (28). Improvements described in the literature are increased self-confidence, better relationships with other people and greater ability to cope with disease (29). Moreover, SE has been shown to increase the chances of people with various disabilities finding a real job in their local community (19). However, the results of a randomised controlled study investigating the effects of SE on people with comorbidities revealed that the method needs to be individualised to prepare the client for the open market (30).

The aim of the present study was to assess whether participation in a rehabilitation programme combining ARG and SE improved HRQoL in women on long-term sick leave.

Methods

The FLC rehabilitation programme was designed and provided by various professionals such as physiotherapists, occupational therapists, social workers and counsellors.
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with special cognitive therapy competence in three intervention gardens located in different areas (here termed south-east, north-west and centre) within or near a larger municipality in Sweden. It involved 14 weeks of ARG activities in groups of 8–12 persons who took part in hands-on gardening, handicraft activities, body awareness and mindfulness exercises, as well as spending time in a natural environment. A variety of activities focusing on factors that might hinder or facilitate the women’s return to work, for example working conditions, physical ability and motivation, as well as psychosocial factors and financial situation, were provided. Reflection and discussion in groups, for example on how to handle one’s life situation and the relationship between humans and nature also took place. SE was introduced to clients at the start of the programme when contact with a job coach was established and the planning of the job search process initiated. The contact between the job coach and client became more intense at the end of the programme. The duration of job coach support varied depending on the women’s individual needs.

Participants and procedure

The participants in the FLC rehabilitation programme were recruited by advertisements at the Social Insurance Agency and the Social Welfare Office as well as in newspapers, on websites and Facebook. Interest in participating was expressed by 329 women who sent an application to the project leader (KA). Of these, 245 were considered eligible for the programme based on the following criteria: women with reduced or lack of working capacity due to physical or mental illness; receiving financial support from the social insurance agency or income support from the municipality; being on sick leave or unemployed. The women’s case manager was informed about the project and a more thorough assessment of whether the applicants’ eligibility for participating in the programme was conducted by the project leader after a structured telephone interview. The women who were included were deemed receptive to the intervention activities and a candidate for a job on the open market or studies after the intervention. All other women were excluded. The interview revealed that 101 women did not fulfil the criteria, or their health status was so poor that they were deemed incapable of participating in the FLC activities. Thus, 144 women remained, of whom 129 agreed to participate in the FLC rehabilitation programme and 123 agreed to answer the SF-36 questionnaire. However, only 52 women answered the questionnaire on all three measurement occasions (Fig. 1). These 52 women constituted the study group.

The dropouts might be partly due to participants leaving the rehabilitation programme prematurely. A plausible explanation for this may be that the women found it too strenuous to participate in activities 2–4 days/week for social or health reasons or because they did not get on with other participants in the group or with the garden therapist. All women had poor physical and mental health, often in combination with a difficult social situation. Their age varied between 21 and 62 years, and they had received financial support from <1 year to >10 years. No significant differences could be found between the study group (n = 52) compared to the total population (i.e. the group that agreed to answer the SF-36 instrument, n = 123) in relation to age, residential area or intervention garden. However, a larger proportion of our study group had received unemployment or welfare benefits for less than one year (Table 1).

Data collection and analysis

The SF-36 (Version 1.0) was used to assess the participants’ HRQoL. The questionnaire consists of eight subscales: PF (Physical Functioning), RP (Role-Physical), BP (Bodily Pain), GH (General Health), VT (Vitality), SF (Social Functioning), RE (Role-Emotional) and MH (Mental Health). Scores for each subscale range from 0 to 100, where higher scores indicate better HRQoL. Two summary scales measure the physical and the mental components of HRQoL: PCS (Physical Component Summary) and MCS (Mental Component Summary). A score of 50 represents the mean for the Swedish normative population.

The questionnaire was translated into Swedish in 1990 and has been thoroughly tested with regard to validity and reliability (31). In order to investigate the level of HRQoL among the participants in the FLC group at baseline compared to the average population, an age- and gender-matched reference group (n = 1,370) was randomly drawn from the Swedish SF-36 normative database (32).

The SF-36 was answered on three occasions: at baseline (M1, n = 107), after 14 weeks of ARG (M2, n = 77) and finally after the job coaching had finished (M3, n = 60). The M1 and M2 questionnaires were completed at the intervention garden, whereas the M3 questionnaire was sent to the women’s home. The women could obtain help with the questionnaires from personnel at the ARG location or the job coach.

Descriptive statistics were used to characterise the sample. Differences in MCS and PCS between the age-matched and gender-matched reference group and the study group were tested using the Mann–Whitney U-test. Within-group differences over time were tested by means of Friedman’s test and the Wilcoxon signed ranks test.

Ethical considerations

Dependence due to financial limitations, the risk of stigmatisation related to mental illness and difficult social
circumstances was considered in the design and performance of the intervention and the study. Oral informed consent was obtained from the participants. The study was approved by the Ethical Committee in Gothenburg (No. 207–11).

Results

The results reveal that the women who completed the FLC rehabilitation programme exhibited a significant improvement in the mental and social dimensions of the SF-36.

The participants in the study group (n = 52) rated their HRQoL as very low at the start of the programme compared to the age- and gender-matched reference group, especially in the MCS and the PCS (Table 2). In the course of the programme, a significant improvement in HRQoL was observed regarding the mental and social aspects measured by the SF-36. Significant changes were found in SF, with especially high rates at M3. Significant progressive improvements were also found in GH, VT and MH between M1 and M2 and between M2 and M3. No specific improvement in the women’s pain was observed during the programme. Some improvements in BP were observed at M3 compared to M2. However, as BP decreased slightly at M2, the level at M3 was about the same as at M1. MCS likewise improved significantly between M1 and M3, although it was far below that of the reference group (n = 1370). The participants’ RE increased between M1 and M2 but seemed to level off at M3.

Discussion

As previously stated, we decided to only describe changes in HRQoL among those who participated in the entire rehabilitation programme and answered the questionnaire on all three occasions. Initially, the women in the
study had very poor HRQoL compared to those in the age-matched and gender-matched reference group. Their impaired health and the fact that the programme lasted for a fairly long period could have influenced the women’s willingness and motivation to complete the rehabilitation programme and the questionnaires. Moreover, the results may have been affected by the season during which the study was conducted; HRQoL might be higher in summer compared to winter, thus indicating more about the participants’ reaction to the weather than about the effect of SE and/or ARG. Lack of information about factors in the women’s life, previous healthcare experiences, type of diseases, comorbidity and work situation can be considered a limitation. Such factors could have had implications for the rehabilitation process and the ability to complete the whole rehabilitation programme including answering the SF-36 questionnaire.

However, the 52 participants did not differ from the initial group in relation to age, residential area, intervention garden or number of years in receipt of state financial support. In line with the ethical debate related to the documented difficulties in recruiting underprivileged and vulnerable people as participants in research studies due to the risk of further discriminating them (2, 6), we would like to underline the fact that 52 participants completed the programme and contributed data on all three measurement occasions, which can be considered a large number.

The results of the study demonstrate that despite a lack of improvement in the participants’ BP, their well-being and MH seemed to increase during the intervention. However, these values were still at a low level on completion of the programme compared to the age-matched and gender-matched control group. The significant long-term positive changes in the women’s GH, VT, MH and SF found in this study are promising. How and to what extent the intervention of garden therapy and supported employment improved the participants’ health-related quality of life needs further investigation.

### Table 1

<table>
<thead>
<tr>
<th>Age</th>
<th>Number n = 52 (Per cent)</th>
<th>Number n = 123 (Per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21–35 years</td>
<td>10 (19)</td>
<td>26 (21)</td>
</tr>
<tr>
<td>36–50 years</td>
<td>33 (64)</td>
<td>76 (62)</td>
</tr>
<tr>
<td>51–65 years</td>
<td>9 (17)</td>
<td>21 (17)</td>
</tr>
<tr>
<td>Total</td>
<td>52 (100)</td>
<td>123 (100)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>43 (23–62 years)</td>
<td>42 (21–62 years)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residential area</th>
<th>Number n = 52 (Per cent)</th>
<th>Number n = 123 (Per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suburban municipalities</td>
<td>14 (27)</td>
<td>28 (24)</td>
</tr>
<tr>
<td>City</td>
<td>16 (31)</td>
<td>40 (34)</td>
</tr>
<tr>
<td>North</td>
<td>3 (6)</td>
<td>13 (11)</td>
</tr>
<tr>
<td>North-west area</td>
<td>14 (27)</td>
<td>32 (27)</td>
</tr>
<tr>
<td>West area</td>
<td>2 (4)</td>
<td>6 (5)</td>
</tr>
<tr>
<td>Total</td>
<td>49 (94) (2 missing)</td>
<td>119 (97) (13 missing)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention garden</th>
<th>Number n = 52 (Per cent)</th>
<th>Number n = 123 (Per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South-east</td>
<td>17 (33)</td>
<td>34 (28)</td>
</tr>
<tr>
<td>North-west</td>
<td>11 (21)</td>
<td>34 (28)</td>
</tr>
<tr>
<td>Centre</td>
<td>22 (42)</td>
<td>53 (44)</td>
</tr>
<tr>
<td>Total</td>
<td>50 (96) (1 missing)</td>
<td>121 (100) (2 missing)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years in financial support</th>
<th>Number n = 52 (Per cent)</th>
<th>Number n = 123 (Per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>12 (23)</td>
<td>20 (16)</td>
</tr>
<tr>
<td>1–5 years</td>
<td>18 (35)</td>
<td>43 (35)</td>
</tr>
<tr>
<td>5–10 years</td>
<td>17 (33)</td>
<td>44 (36)</td>
</tr>
<tr>
<td>&gt;10 years</td>
<td>5 (10)</td>
<td>15 (12)</td>
</tr>
<tr>
<td>Total</td>
<td>52 (100)</td>
<td>122 (99) (10 missing)</td>
</tr>
</tbody>
</table>

### Table 2

<table>
<thead>
<tr>
<th>SF-36 categories</th>
<th>Age- and gender-matched reference group (n = 1370)</th>
<th>Baseline measurement 1 Md (interquartile)</th>
<th>Measurement 2 Md (interquartile)</th>
<th>Measurement 3 Md (interquartile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PF</td>
<td>88,82</td>
<td>85.00 (27.50)</td>
<td>80.00 (30.00)</td>
<td>85.00 (33.75)</td>
</tr>
<tr>
<td>RP</td>
<td>85,22</td>
<td>0.00 (75.00)</td>
<td>25.00 (50.00)</td>
<td>37.50 (75.00)</td>
</tr>
<tr>
<td>BP</td>
<td>73,11</td>
<td>51.00 (52.00)</td>
<td>41.50 (41.00)</td>
<td>51.00 (53.00)*</td>
</tr>
<tr>
<td>GH</td>
<td>77,01</td>
<td>36.00 (30.00)</td>
<td>40.00 (21.50)</td>
<td>46.00 (26.50)**</td>
</tr>
<tr>
<td>VT</td>
<td>67,44</td>
<td>20.00 (23.75)</td>
<td>30.00 (30.00)**</td>
<td>32.50 (35.00)**</td>
</tr>
<tr>
<td>SF</td>
<td>87,69</td>
<td>37.50 (25.00)</td>
<td>37.50 (37.50)**</td>
<td>50.00 (50.00)**</td>
</tr>
<tr>
<td>RE</td>
<td>85,48</td>
<td>0.00 (33.33)</td>
<td>33.333 (66.67)*</td>
<td>33.333 (66.67)*</td>
</tr>
<tr>
<td>MH</td>
<td>79,85</td>
<td>40.00 (28.00)</td>
<td>48.00 (23.00)**</td>
<td>52.00 (31.25)**</td>
</tr>
<tr>
<td>Pcs</td>
<td>50,31</td>
<td>44.0252 (19.22)</td>
<td>39.5656 (16.46)</td>
<td>43.7265 (20.72)</td>
</tr>
<tr>
<td>Mcs</td>
<td>49,23</td>
<td>19.3388 (15.79)</td>
<td>27.0877 (15.76)**</td>
<td>27.7810 (19.85)**</td>
</tr>
</tbody>
</table>

PF, Physical Functioning; RP, Role-Physical; BP, Bodily Pain; GH, General Health; VT, Vitality; SF, Social Functioning; RE, Role-Emotional; MH, Mental Health; (Scale 0-100 where 100 is high health-related quality of life and 0 represents no quality of life); PCS, Physical Component Summery; MCS, Mental Component Summary (50 = the reference value in the SF-36 normative database).

Between measurement 1–2: ***p = 0.000, **p = 0.01, *p < 0.05.
Between measurement 1–3: ###p = 0.000, #p < 0.01, *p < 0.05.
extent the combination of ARG and SE contributed to this result is unclear because of the risk of potential confounding factors and limited sample size. Nevertheless, it is not unreasonable to assume that the positive changes could be explained by the indoor and outdoor FLC group activities involving exercise and social ability support. As many of the women had been on sick leave for a number of years, their social networks were reduced, resulting in social isolation. The FLC group activities could thus have become a turning point due to the women’s inclusion in a social context where the potential for increased self-esteem and personal growth was promoted. On the other hand, finishing the programme could be a threatening prospect due to loss of the relationship with fellow members of the FLC group and might explain why the RE scores levelled off at M3.

The support from the job coach opened up an opportunity for a new and sustainable social network. Our results thus correspond with those of Becker et al. (29), who found that SE enhanced self-confidence, relationships and ability to cope with illness. We also conclude that our results are in line with research that highlights the importance of individualised SE to prepare the women for the open market (30), as evidenced by the relatively high SF rate M3, that is when the women started work or study.

In accordance with other studies (5), the present results indicate that long-term sick leave has negative effects on women’s social competence and MH. Sick leave is not only a consequence of physical and mental suffering but sometimes becomes an option for physicians to “get a break” from situations where they are unable to find a solution to the patient’s problems (33). Living with symptoms such as pain, anxiety and stress has implications for a person’s sense of identity and self-confidence. Rehabilitation thus involves emotional elements, for example desire, longing and vanity (34), which should be taken into account in an individualised and comprehensive rehabilitation programme. The results of this study indicate that the combination of ARG and SE is a valuable tool for promoting women’s VT, social and mental well-being during an intervention, an interpretation in line with previous research that has demonstrated the empowering impact of an aesthetic environment for health (23–26).

We wish to address some methodological issues that emerged during the research process in relation to the realisation of the project. The financial prerequisites for the project changed at the beginning of the recruitment process, which complicated the realisation of the rehabilitation programme as well as the data collection. The project leader recommended more time for planning, managing and implementing the complex programmes involving actors who were unfamiliar with each other's competences and working methods. In the clinical evaluation of the programme, the importance of allocating sufficient time for the intervention was stressed. For example, difficulties locating eligible participants who could complete the programme as planned were mentioned (35).

The difficulties that we experienced led us to reflect on how best to design research studies and we therefore wish to make the following recommendations. The planning of research studies involving vulnerable persons with long-term health conditions and complex social situations should take into account that randomisation into intervention vs. control groups is problematic due to the heterogeneity of the participants in terms of diseases, health status, social and domestic situation as well as individual interests and motivation. These circumstances and factors must be considered when formulating inclusion criteria and when conducting interviews during the selection process. It appears important that the interventions in research projects are possible to accomplish from the participants’ perspective. If an intervention is experienced as arduous and difficult, it can lead to feelings of failure, which in turn might increase the participant’s existing burden. On the other hand, persons randomised into the control group might feel disappointed and lose hope of recovery. In order to develop adapted intervention studies in the context of vulnerable persons and long-term illness, we recommend that participants should be at an early stage of their illness process (and sick leave); they should be carefully selected for the rehabilitation programme in terms of interests, health status and social situation; careful consideration should be given to whether the participants have sufficient strength to complete the intervention as well as take part on all measurement occasions; comparisons should be made within the study group over time rather than in relation to a control group; long-term follow-ups should take place; and efforts should be made to minimise dropouts by offering different questionnaire administration modes, for example telephone interviews or electronic questionnaires. We also suggest that quantitative measurements should be combined with qualitative studies, such as interviews and observations, to obtain information about what occurs in a complex intervention and what the participants themselves consider important.

Conclusions

The results of this study demonstrate that the FLC programme positively changed the participants’ mental and social well-being. The programme can therefore be seen as a viable method for reducing socially induced suffering and enabling a return to working life. One important factor for a successful outcome might be a more rigorous selection of participants in relation to their interests, health status and social situation. Longitudinal studies
Acknowledgements

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Author contributions

Karin Alstersjö, Eva Lidén and Ingegerd Bergbom were involved in the study design. Karin Alstersjö was involved in data collection. Eva Lidén, Frida Lundin Gurnér, Sara Fransson and Ingegerd Bergbom performed the data analysis. Eva Lidén and Ingegerd Bergbom interpreted the results and finally drafted the manuscript which has been accepted by all authors.

Ethical approval

The study was approved by the Ethical Committee in Gothenburg (Dnr 207-11).

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