Gender differences in resources related to depressive symptoms during the early years of retirement: A Swedish population-based study

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Objectives: To examine levels of depressive symptoms during the early years of retirement in men and women and to investigate potential gender differences in associations with self-reported health, financial insecurity, social network and psychological resources.

Methods: Data was drawn from the first wave in the Health, Aging and Retirement Transitions in Sweden-study (HEARTS) including a total sample of 1148 retirees, aged 60 to 66. Level of depressive symptoms and associations with health, financial insecurity, social network and psychological resources were investigated in regression analyses in the total sample and in bivariate correlation analyses in the subgroup at risk of depression as defined by a cut-off ≥9 on the Center for Epidemiologic Studies Depression Scale (CES-D).

Results: Mean CES-D scores were similar in men and women in the entire sample. The CES-D identified 144 individuals at risk of depression (men 14%, women 11%, n.s.). Although the pattern of related resources was similar in men and women, a greater proportion of the variance was explained in the male group (51% vs 37%). Health, quality of social network, social support and competence satisfaction were all correlated with depressive symptoms in men in the high risk group, but no associations were seen in women.

Conclusions: Similar levels of depressive symptoms were observed in women and men in the retirement transition. However, the relevance of the selected resources may be greater in men. Research on the management of depressive symptoms in the transition between midlife and aging needs to take gender into consideration.

KEYWORDS
depressive symptoms, gender differences, population-based, retirement
1 | INTRODUCTION

The retirement process comes with two developmental challenges: adjusting to the loss of the work role and the social interactions that were a part of daily life, and developing a new postretirement lifestyle. A recent review concludes that for most retirees, retirement has a limited or positive effect on well-being. However, some individuals experience loss of resources in connection with retirement, rendering them more vulnerable to maladjustment. While it has been argued that women enter retirement from a disadvantaged standpoint, with higher initial levels of depressive symptoms, less sense of personal control and less perceived income capacity, there are some indications that the association between retirement and poor mental health may be stronger in men compared to women. Others show no gender difference; a recent Swedish study that estimated trajectories of depressive symptoms observed associations between retirement transition and depressive symptoms in neither men nor women.

Men and women have had different work experiences, work histories and employment opportunities, and have different ways of adjusting to retirement. Differential experiences in men and women are presumed to influence personal goals as well as the resources available to obtain these goals. Thus, it is important to examine the impact of gender on the retirement transition and to identify resources of particular relevance in men and women as new cohorts enter retirement.

Resources are defined by Hobfoll as entities that are of central value to our well-being such as self-esteem or health, but also factors such as money or social support that help us reach or obtain our valued goals. Poor health, low income and poor social networks are factors that could make the transition more difficult and stressful and potentially contribute to the development of depressive symptoms. Previous studies have demonstrated positive effects of health, social networks, marriage, personal and psychological resources, and finances on well-being or, inversely, depressive symptoms. However, few studies address potential gender differences in resources in relation to depressive symptoms during the retirement transition. One that looked specifically at socio-economic risk factors for depression observed similar patterns for women and men. Higher educational level was associated with greater level of depressive symptoms in that study; higher subjective social status was associated with fewer symptoms.

In the current study we utilize data from the HEARTS study (HEalth, Aging and Retirement Transitions in Sweden) to examine potential gender differences in depressive symptoms and related resources. We hypothesized that the level of depressive symptoms and the associations with self-reported health, financial insecurity, social network and psychological resources would vary in strength for men and women. We also examined if retirees with high depressive symptom scores differed from their counterparts with lower scores, in terms of self-reported health, financial, social and psychological resources. Separate analyses were carried out for women and men.

2 | METHODS

2.1 | Participants and data collection

The study used cross-sectional data from the HEARTS study. This study, conducted by the Adult Development and Aging Group at the Department of Psychology, University of Gothenburg, focuses on how people cope with the transition to retirement. The HEARTS cohort is followed annually and includes measures of retirement status, perceptions of work life, health, health behavior and lifestyle, psychological well-being, cognitive function, social network and personality. The rationale for the study, research protocol and initial findings are described in detail by Lindwall et al. The study was approved by the ethical committee at the University of Gothenburg, diary no. 970-14.

A nationally representative sample of participants aged 60-66 were recruited through national registers in April 2015. Sweden has a flexible retirement system, allowing pension withdrawal from age 61; employees have the right to continue working until age 67. According to the Swedish Pensions Agency, the average age at retirement is 64.6 years. The invitation to participate was sent out to 14,990 individuals. As previously reported, a total of 5,913 persons completed the survey by web link (or by paper, if preferred by the participant), with a response rate of 39.4%. The cohort consists of slightly more women (53.0%) than men (45.4%). Persons who chose not to specify gender (1.6%) were not included in the analyses. Respondents had a slightly higher level of education than the general population. The majority reported being married or living with a partner (71.0%) and most had children (88.8%) and grandchildren (65.4%). Most participants were born in Sweden (84.7%). Almost two thirds of the sample (64.1%) was not retired at baseline, but 25.8% of the respondents considered themselves retirees.

The current study uses a sample drawn from the first wave of data, and focuses on those who are experiencing their first years of retirement (mean duration 1.66 years, SD = 1.73). In total, 1,148 retirees, 485 men and 663 women, were included. Mean age was 64.89 years (SD = 1.35). Mean number of years of education was 12.81 (SD = 3.19), and one fourth (26.3) of the sample had a college degree. The majority reported being married or living with a partner (76.1%), and they were for the most part born in Sweden (86.2%).
About one quarter (26.2%) reported that they had reduced their work hours prior to retirement. One tenth (9.6%) of the participants in the first wave received disability pension prior to retirement.

### 2.2 Measures

#### 2.2.1 Dependent variable

**Depressive symptoms**

An 11-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) was used to assess depressive symptoms (See Supporting Information for your reference). For each item, respondents were asked to rate how often during the past week they had experienced a certain feeling. Response alternatives were grouped by number of days (0 days/less than 1 day [0], “1 to 2 days” [1], “3 to 4 days” [2], and “5 to 7 days” [3]) and summed into a depression index (0-30). Positively phrased items were reversely coded so that higher values on the scale indicate higher frequencies of depressive symptoms. The alpha reliability for this index was .81 in the current study.

**Competence satisfaction**

Psychological resources in terms of competence satisfaction were measured with the competence satisfaction subscale from the BPNS. Participants responded to statements such as “I feel I can successfully complete difficult tasks.” The items were rated on a Likert scale from 1 to 5 (completely false-complete true) and summed into an index (3-15); the higher the score the higher the competence satisfaction. Negatively worded items were reversed. The alpha reliability for this index was .59.

**Autonomy satisfaction**

Autonomy was measured on the autonomy satisfaction subscale of the BPNS. For example, the participants took position on the following statement: “I feel my choices express my true self.” The items were rated on a Likert scale from 1 to 5 (completely false-complete true) and summed into an index (3-15); the higher the score the higher the autonomy satisfaction. Negatively worded items were reversed. The alpha reliability for this index was .66.

#### 2.2.2 Independent variables

**Self-rated health**

Health was measured with a single item to capture whether the retirees experienced any health problems that could prevent or hinder them to complete a range of tasks, whether simple or complex: “Does your general health condition prevent you from doing the things you want to do?” Respondents chose one of three options “Not at all” (1), “Yes, to some extent” (2) or “Yes to a high extent” (3).

**Financial insecurity**

To assess financial insecurity respondents were asked “If you found yourself in an unforeseen situation where you needed to get a hold of 15,000 SEK (approx. €1500), would you be able to get it?” The response alternatives were: “Yes with my own/my household’s funds” (1), “Yes, but with the help of others (family, relatives, friends)” (2), or “No” (3).

**Perceived social support**

The Multidimensional Scale of Perceived Social Support (MSPSS) was employed to assess perceived social support. MSPSS consists of 12 items that assess perceived social support from friends, family and significant others. The participants responded to statements such as: “There is a special person with whom I can share my joys and sorrows.” The items were rated from on a Likert scale from 1 = completely false to 7 = completely true. The responses were summed into a Perceived social support index (12-84); the higher the score the higher the perceived social support. The alpha reliability for this index was .95.

**Quality of social network**

The Basic Psychological Need Satisfaction (BPNS) subscale of relatedness satisfaction was used as a measure of quality of social networks. The participants responded to statements such as: “I feel close and connected with other people who are important to me.” The items were rated on a Likert scale from 1 to 5 (completely false-completely true) and summed into an index (3-15); the higher the score the higher the relatedness satisfaction. Negatively worded items were reversed. The alpha reliability for this index was .66.
In order to address missing values, pairwise deletion was used for all statistical analyses. A pairwise deletion removes the specific missing values and not the entire case. An alpha level of .05 was used for all statistical analyses.

3 | RESULTS

Means, standard deviations and correlations for all variables are presented separately for men and women in Table 1. Correlations between independent variables and CES-D scores were examined in order to justify further analyses. Self-rated health, financial insecurity, perceived social support, quality of social network, competence satisfaction and autonomy satisfaction all showed a significant moderate correlation with depressive symptoms, for both men and women. Table 1 shows further that correlation coefficients were in general slightly stronger for men than women. While neither age nor education were correlated with depressive symptoms for men, they were significantly but weakly correlated with depressive symptoms in women.

As initial analyses showed a significant moderate correlation with depressive symptoms and all the independent variables, further analyses were justified. Hierarchical regression analyses with depressive symptoms as the dependent variable included two steps. In step 1 age and education were included; education was significant in the total sample but in the stratified analyses, education reached significance in women but not in men (Table 2). Adding the independent variables self-rated health, financial insecurity, perceived social support, quality of social network, competence satisfaction and autonomy satisfaction in step 2, all variables with the exception of competence satisfaction in women and quality of social network in men significantly contributed to the model by an additional 42% (36% for women and 52% for men) of explained variance of the dependent variable (Table 2). The β-values indicate that self-rated health and autonomy satisfaction were the most important contributors to explaining variance in CES-D scores. The influence of self-rated health, financial insecurity, perceived social support, quality of social network, competence satisfaction and autonomy satisfaction on depressive symptoms was examined in separate models for men and women (Table 2). Noteworthy, competence satisfaction was significantly associated with CES-D score in men but not in women. Quality of social network was significantly associated with CES-D scores in women but not in men.

The second aim was to focus on a risk group of individuals (CES-D score ≥ 9) and to identify potential differences considering self-reported health, financial, social and psychological resources as compared to individuals with fewer symptoms. The risk group

| Variable                  | M    | SD   | 1    | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     |
|---------------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| **Women (n = 663)**       |      |      |      |       |       |       |       |       |       |       |       |
| 1. Depressive symptoms    | 3.97 | 4.56 | 1    |       |       |       |       |       |       |       |       |
| 2. Education              | 12.78| 3.12 | −0.09 | 1     |       |       |       |       |       |       |       |
| 3. Age                    | 64.98| 1.29 | −0.08 | −0.01 | 1     |       |       |       |       |       |       |
| 4. Self-rated health      | 1.48 | 0.61 | 0.44*** | −0.08* | −0.10** | 1     |       |       |       |       |       |
| 5. Financial insecurity   | 1.20 | 0.54 | 0.31*** | −0.10* | −0.07 | 0.23*** | 1     |       |       |       |       |
| 6. Perceived social support| 72.56| 14.30| −0.38*** | 0.05 | 0.05 | −0.18*** | −0.22*** | 1     |       |       |       |
| 7. Quality of social network| 13.75| 1.78 | −0.37*** | 0.04 | 0.05 | −0.18*** | −0.15*** | 0.57*** | 1     |       |       |
| 8. Competence satisfaction| 11.73| 2.14 | −0.35*** | 0.10* | 0.05 | −0.22*** | −0.18*** | 0.34*** | 0.39*** | 1     |       |
| 9. Autonomy satisfaction  | 12.17| 2.15 | −0.48*** | 0.09* | 0.06 | −0.28*** | −0.25*** | 0.41*** | 0.45*** | 0.48*** | 1     |
| **Men (n = 485)**         |      |      |      |       |       |       |       |       |       |       |       |
| 1. Depressive symptoms    | 4.02 | 4.71 | 1    |       |       |       |       |       |       |       |       |
| 2. Education              | 12.87| 3.28 | −0.08 | 1     |       |       |       |       |       |       |       |
| 3. Age                    | 64.77| 1.41 | −0.03 | −0.06 | 1     |       |       |       |       |       |       |
| 4. Self-rated health      | 1.46 | 0.59 | 0.50*** | −0.05 | −0.06 | 1     |       |       |       |       |       |
| 5. Financial insecurity   | 1.17 | 0.53 | 0.38*** | −0.05 | −0.08 | 0.31*** | 1     |       |       |       |       |
| 6. Perceived social support| 65.98| 16.74| −0.43*** | 0.00 | 0.04 | −0.17*** | −0.26*** | 1     |       |       |       |
| 7. Quality of social network| 13.24| 1.81 | −0.48*** | −0.02 | 0.07 | −0.22*** | −0.18*** | 0.58*** | 1     |       |       |
| 8. Competence satisfaction| 11.77| 2.06 | −0.50*** | 0.09 | 0.00 | −0.28*** | −0.12* | 0.33*** | 0.47*** | 1     |       |
| 9. Autonomy satisfaction  | 12.12| 2.15 | −0.54*** | −0.01 | 0.02 | −0.25*** | −0.12** | 0.42*** | 0.52*** | 0.49*** | 1     |

*P < .05.
**P < .01.
***P < .001.
consisted of 12.5% of the total sample (14.0% of the men and 11.5% of the women, \( P = .20 \) in accordance with Fisher’s exact test). The risk group was younger compared to those with low CES-D scores and had slightly fewer years of education (12.42 compared to 12.87).

Descriptive statistics are presented separately for subgroups with low vs high CES-D scores in Table 3. All independent variables differed

### Table 2
Hierarchical multiple regression in total sample with CES-D score as dependent variable

| Parameter                  | Total (n = 1148) | Women (n = 663) | Men (n = 485) |
|----------------------------|-----------------|----------------|--------------|
|                            | Est.            | SE             | Est.          | SE             | Est.          | SE             |
| Intercept                  | 17.12           | 7.10           | 24.03         | 9.77           | 9.66          | 10.49          |
| Age                       | −.18            | .11            | −.29          | .15            | .08           | .07            |
| Education                  | −.12            | .05            | −.12          | .06            | −.08*         | .07            |
| \( R^2 \)                  | .01             |                | .01           |                | .01           |                |
| Adj. \( R^2 \)             | .01             |                | .01           |                | .00           |                |

### Table 3
Descriptive statistics of retirees with low CES-D score and the risk group

| Parameter                          | Total     | Low CES-D | Risk group | t-value | Cohen's d |
|------------------------------------|-----------|-----------|------------|---------|-----------|
| n                                  |           |           |            |         |           |
| Men                                | 485       | 417       | 68         |         |           |
| Women                              | 663       | 587       | 76         |         |           |
| Total                              | 1148      | 1004      | 144        |         |           |
| M (SD)                             |           |           |            |         |           |
| Age                                | 64.89 (1.35) | 64.94 (1.30) | 64.59 (1.59) | 2.45** | .24       |
| Education                          | 12.81 (3.19) | 12.87 (3.19) | 12.42 (3.16) | 1.54   | .14       |
| Depressive symptoms                | 3.99 (4.62)  | 2.58 (2.28)  | 13.87 (4.73) | 28.16*** | 3.04      |
| Self-rated health                  | 1.47 (0.60)  | 1.38 (0.54)  | 2.09 (0.67)  | −14.32*** | 1.31      |
| Financial insecurity               | 1.19 (0.54)  | 1.13 (0.45)  | 1.62 (0.85)  | −6.58***  | .72       |
| Perceived social support           | 69.80 (15.70) | 71.70 (13.95) | 55.75 (20.34) | 8.54***  | .91       |
| Quality of social network          | 13.53 (1.81) | 13.76 (1.60) | 11.93 (2.31) | 8.92***  | .92       |
| Competence satisfaction            | 11.75 (2.10) | 12.00 (1.96) | 9.97 (2.24)  | 11.16*** | .96       |
| Autonomy satisfaction              | 12.15 (2.15) | 12.48 (1.87) | 9.79 (2.53)  | 11.87**  | 1.21      |

\*\*\* \( P < .001 \).  
\* \( P < .01 \).  
\*\* \( P < .01 \).

**Risk group = score ≥ 9 on the CES-D scale.**
significantly between the two groups, showing that the risk group reported poorer self-rated health, less financial security, less perceived social support, poorer quality of social network, less competence satisfaction and less autonomy satisfaction.

Descriptive statistics for men and women within the risk group are presented in Table 4. Among all the included variables, only perceived social support differed significantly between men and women, showing that men with high CES-D score perceived less social support compared to women. No differences in self-rated health, financial security, quality of social network, competence satisfaction or autonomy satisfaction for women and men were found.

Correlation analysis between independent variables and CES-D scores within the risk group showed no significant results for women (Table 5). Self-rated health, social support, quality of social network and competence satisfaction were however significantly correlated with depressive symptoms for men. Correlation coefficients were in general higher for men as compared to women.

### Discussion

Depression scores were similar in newly retired men and women in the total cohort. High depression scores were observed in 14% of the men and 11% of the women. Within this risk group, resources considered important for well-being in retirement correlated with depressive symptoms in men, but not women.

The lack of gender difference regarding the prevalence figures for the high risk group contrasts with the findings of Kim and Moen, who also applied the CES-D. In the latter study, the proportion with high depression symptoms was greater in men. Our studies are not directly comparable, as Kim and Moen employed a 12 item version. This and other differing methodologies might help to explain the disparity. Another possibility is that period changes may be in effect; a recent Swedish birth cohort comparison showed decreasing depression rates in older women, but not in men.

For the total sample, the regression analyses showed that all resource variables (with the exception of competence satisfaction in women and quality of social network in men) were significantly correlated with depressive symptoms, which suggest that they are important to well-being. However, the effect sizes indicate that self-rated health and autonomy satisfaction were the two most important factors. The finding is in line with previous research showing that health and autonomy or control related constructs are central resources related to lower risk of depressive symptoms in retirement. Thus, even if our sample is relatively young and overall healthy, the associations might be an expression of the current expectations of a period of life characterized by an active lifestyle and absence of disease and disability.
Individuals with higher CES-D scores experienced poorer self-rated health and social support, they had less autonomy satisfaction, quality of social network and competence satisfaction. They also felt more financially insecure than their peers with lower depression scores. Individuals with high depressive symptom scores could potentially be influenced by changes in cognitive style related to clinical depression. This includes a negative perception of the self, the world, and the future (the cognitive triad) as proposed by Beck. Negative thinking and perception could affect respondents with more depressive symptoms to see the world and rate their measures even more negatively given this bias. However, it would be anticipated that such a phenomenon would have a similar effect on both women and men.

The results from this study showed that the resources previously found to be of importance for well-being and depressive symptoms in retirement explained depressive symptoms in men but not women within the risk group (and weaker correlations and less explained variance for women in the total group). The results suggest that the driving factors in depression for men and women in the transition between midlife and aging may differ. Resources previously found to be of importance in the retirement transition might be of greater salience for the development of depressive symptoms in male retirees. This is of particular interest considering the gender differential in suicide statistics seen in many countries, with extremely high rates of suicide in older men.

The strength and novelty of our study is the focus on gender differences within the risk group, which renders a different pattern from that of the total sample. There are however limitations related to the cross-sectional design; this study gives us no information about the health of the retirees prior to retirement or the pre-retirement levels of depressive symptoms. Further, we cannot differentiate between the stress of transition and the stress of being retired, as this would require a longitudinal design. Additional methodological considerations should also be noted. There might be other important factors, previously found to affect well-being, that could contribute to the understanding of depressive symptoms for example, marital quality and status, involuntary retirement, living with and caring for a partner with functional limitations or a strong identity formation attached to the work role. Also, it would be valuable to further investigate medical history and antidepressant prescriptions as well as retirement savings and partner’s retirement status. Future studies should look into the possibility of accessing registry data to address these issues. Further, retirees in this study were relatively young (mean age 65) and findings cannot be extrapolated to those who retire at higher ages. Another methodological consideration is the CES-D cut-off. The cut-off score on the original CES-D 20-item scale is >16. A cut-off ≥9 has previously been employed on the CES-D 11-item scale to indicate clinically relevant levels of depressive symptoms. For the purpose of the current study, we calculated a cut-off one SD above the mean score in our sample, which yielded a value equivalent to that of the other studies (≥9). Considering this, the risk group identified with this procedure is likely a group at risk of clinical depression. The proportion identified with this CES-D cut-off in our study (13.5%) can be compared with prevalence figures from a Swedish population-based sample of 70-year-olds. Using symptom-based algorithms, the authors observed major depression in 1% to 2% of the men and 3% to 8% of the women. Corresponding figures for minor depression were about 5% to 7% for men and 8% to 12% for women. Results from another population-based study which focused on individuals aged >50 years, the Survey of Health, Ageing and Retirement in Europe (SHARE), showed a depression prevalence of 19.9% in the Swedish sample. Another important consideration is the low participation rate in the present study, which reflects the overall negative trend in response rates in most European studies similar to the HEARTS study. The participants in our study had a higher education level compared to the general population which might affect generalizability. Finally, our study focuses on recent retirees, and analysis of prospective HEARTS data will clarify whether resources at retirement differentially influence the prognosis of depression symptoms in men and women.

5 | CONCLUSION

While similar levels of depressive symptoms were observed during the early years of retirement in both women and men, the relevance of some resources may be greater in men. Retirement represents a cultural marker of the transition between midlife and ageing, and research on the prevention and management of depressive symptoms in this period of life needs to take gender into consideration.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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**SUPPORTING INFORMATION**

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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