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Abstract

Earlier studies on women's health and drinking and the contemporary associated risk factors, have highlighted the need for more complex approaches in understanding the pathways into women's problem drinking. Research, from both social science and from occupational therapy models, has underlined the importance of deconstructing the often dichotomized way of investigating women's daily lives (such as in paid and unpaid work or in work and leisure) when discussing factors from the daily life environment and their impact on health issues. The aim of this study was to explore the relationship between women's patterns of everyday occupation and alcohol consumption using the broader concept of occupation from occupational therapy models. This was a cross-sectional study from the latest wave (2000) of a population-based project, Women and Alcohol in Gothenburg (WAG). The study group consisted of 851 women, aged 20-55 years. Using an individually oriented method, two-step clustering, three distinct patterns of everyday occupations were identified. Significant associations with problematic alcohol consumption were found in the clusters, characterized by lower engagement in leisure activities and a larger amount of spare time. The need for new preventive approaches, including investigating the importance of having engaging leisure activities, is discussed.

Key words: Cluster analyses, population based study, problematic alcohol consumption, self reported satisfaction, socio-demographic factors.

Introduction

Women's living conditions and multiplicity of roles, together with their alcohol consumption, have gradually changed during the post-war period (1). The associations between these three factors still need further investigation. In an international study from 29 countries, it was concluded that women's alcohol consumption was higher in countries with higher degrees of modernization and gender equity (2). In Sweden, women's share of the total alcohol consumption increased from 20% in 1968 to around 40% in the beginning of the 21st century (3). In the year 2000, 8% of the female population in Sweden, compared to 14% of males, was reported to have a problematic or high risk alcohol consumption. The development of different drinking patterns and alcohol-related problems is hypothesized to be multi-factorial; influenced by age, life-stage and gender, as well as social and cultural factors (4-5). The associations between alcohol consumption and the structures of every day life (such as work, family and social networks) have been investigated from different perspectives.

One perspective when approaching drinking patterns has been to explore gender differences in lifestyle as well as drinking habits, and to investigate if there has been a closure of the gap between male and female behaviour (termed gender convergence) (6). A study by Bergmark examined gender convergence and its consequences on drinking patterns among Swedish women between 1979 and 2003 (1). Two new drinking patterns could be seen, in addition to the traditionally mild form of abstinent, female drinking pattern. Single, middle-aged women living in urban areas, drank more alcohol, but without becoming intoxicated, whereas a younger, urban group drank in a more masculine way. The latter group drank more beer and liquor and also got intoxicated more often. Age-effects were found, but no general convergence process between men and women regarding drinking patterns. One conclusion

was that traditionally significant factors for drinking, such as education or marital status, have weakened in explanatory power.

Another perspective has been to investigate the influence of social roles on alcohol consumption. A study from four European countries found no single, stable role pattern predicting heavy drinking amongst females, but concluded that cultural norms and the cultural meaning of roles could affect alcohol consumption (7). Each country showed different connections between role combinations and heavy drinking. Further, the social position of women influenced the associations between specific role combinations and heavy drinking. In addition, another study found a connection between a higher number of social roles and a lower risk for heavy volume drinking (8).

Alcohol habits have further been studied in a life course perspective. The transition between different age grades is supposed to involve change in personal or social circumstances which can either alter or reinforce behaviour such as alcohol drinking (9). In an American longitudinal study concerning alcohol consumption before and after college education, decreased consumption and a lower degree of self-reported alcohol related problems were found post graduation (10). Moreover, stress became a more dominant reason for drinking, and this was more prominent among women. The women who drank to reduce stress also reported more negative consequences from drinking. Studies from the WAG-project, (Women and Alcohol in Gothenburg) found that factors related to home and private life, such as social life and leisure activities, may be important in the development of alcohol-related problems. Never being married, or having no children at home to care for, increased the risk for alcohol dependence and abuse (11), as did having less contact with friends, or participating in cultural and social activities to a lesser degree. (12).

The importance of more complex explanatory models has been underlined in studies on women's everyday life and their health. In a study of working women with preschool

children, the relationship between aspects of everyday occupations on the one hand, and health and well-being on the other, was investigated (13). The authors concluded that the women's hassles, defined as perceived troubles or irritations, were mainly generated by the social environment and by temporal limitations. The importance of considering women's total patterns of everyday occupations and not focusing only on the work situation, when treating occupation-related ill-health, was emphasized. In a study among 146 American women with young school children, a link was found between daily stress and adverse health outcome (14). Role balance, (here defined as the tendency to become optimally engaged in the performance of every role in one's life) was found to have a buffering effect on the relationship between daily hassles and health status. These two variables, daily hassles and role balance, predicted health better than socioeconomic or demographic characteristics. Inconsistent results in respect of the analysis of role combinations, multiple roles and health outcome, were found in the WAG study, whilst neither role strain nor role enhancement was found to predict health from a five-year perspective (15). In a study on work-life balance in women's lives, it was concluded that the work-life system was multi- and not two-dimensional; thus, it should be of interest to examine how all life domains, in addition to family and employment, interrelate (16). The author proposed that from a life balance perspective, including financial security and leisure activities are just as important as examining the work and family domains. Further, Sacker et al. found, on the basis of a path analysis study, that the social differences in women's general self-assessed health can be partially understood in terms of occupational/employment status and material inequalities, but that new hypotheses also need to be generated to account for the residual effects not fully explained by behavioural and psycho-social factors (17).

Occupational therapy models may offer a more complex view of human experiences. The Canadian Model of Occupational Performance and Engagement, (CMOPE) describes

occupational engagement as the result of how the dynamic relationship between the person, her/his environment, and occupations evolves over a person's life-span (18). Occupational performance refers, in this model, to groups of activities and tasks of everyday life, named, organized and given value and meaning by individuals and their culture. The multitude of daily tasks individuals perform build patterns of everyday occupations, uniquely valued by, and for, each individual (19). A review article described the need for an individually satisfying balance in people's patterns of everyday occupations (20). Suggestions were made how to measure this participation in everyday life, including both a dimension of actual 'doing' and personal preferences and satisfaction. Furthermore, the importance of developing an understanding of patterns of participation across locations, gender, culture and the life span was underlined. Another review addressed the limitations inherent in beliefs regarding a healthy balance of work and leisure (21). The author concluded that a useful framework for studying a healthy balance within daily life may require deconstruction of the dichotomy between work and leisure, through examination of the affective experiences that occur during engagement in one's customary round of occupations. In a proposed model of lifestyle balance, a healthy balance was defined as 'a satisfying pattern of daily occupation that is healthy, meaningful and sustainable to an individual within the context of his or her current life circumstances' (22). To be satisfied was thus explained as a congruence between the actual doing and an individual's desired participation in occupations.

Moreover, when studying individuals, the usefulness of using pattern analysis, such as cluster analysis, instead of a variable oriented approach, has been proposed (23). Cluster analysis is used for obtaining empirical groupings of subjects based on their values on selected variables (24). The method is based on the premise that a valid measure of similarity between any two individuals can be obtained and could be of use when dealing with multi factorial data. Within alcohol research, cluster analysis has previously been used in studying

alcohol drinking patterns (25) and natural recovery from alcohol dependence (26). In our own study (WAG), we have also used cluster analysis when studying drinking context and alcohol consumption among young, Swedish women (27).

To summarize, understanding the drinking behaviour of women is important in order to find preventive measures. Several researchers have also underlined the importance of finding more complex approaches (28), or new fragmentations within the traditional groupings of individuals, in finding factors explaining drinking patterns (1). Research so far indicates that identifying patterns of daily occupations might be a useful approach in such an endeavor.

Aims

In the present study, we want to explore the relationship between women's patterns of everyday occupations and alcohol consumption. More specifically we want to

- Identify different groups of women with respect to their individual patterns of everyday occupations.
- Analyze the associations between women's patterns of everyday occupations and their alcohol consumption, also taking socio-demographic factors into consideration.

Material and methods

Study design

This study is part of the WAG project, a Swedish, three-wave longitudinal, population-based, multi-purpose study described in detail elsewhere (29-30). In each wave, the data collection was done with a two-phase stratification procedure, based on an alcohol problem-screening

questionnaire (SWAG) in the first phase and structured interviews done with a randomized, stratified sample in the second phase. In the first wave, the stratification groups were made up of respondents with a SWAG score of ≥ 4, a score of 1-3 and a score of 0, respectively. The screening questionnaire was sent to 3130 women born in 1925, 1935, 1945, 1955 and 1965, living in District West in Gothenburg, Sweden in 1986, and in the second phase, 399 women participated in an interview over the period from 1989-1990. In the second and third waves, SWAG scores of ≥ 5, 1-4 and 0 respectively, were used to construct the stratification groups. Since younger women have seemed to report more alcohol related problems, compared to older women, at a given consumption level, the cut-off level on SWAG was increased to ≥ 5. This was done in order to avoid sampling too many young women with high alcohol consumption but with small risk of alcohol problems. In 1995, the questionnaire was sent to 2910 women born in 1970 and 1975, living in the western or central districts in Gothenburg, and of these, 615 women participated in an interview. In the third wave, in 2000, all women (n=1098) born in 1980 and living in the same districts were invited to participate. In this group, 358 women completed the interview. Furthermore, in 2000, re-interviews were made with 728 women who had participated either in both or one of the previous interview waves. The present study is based on the interviews made in 2000, those with the new respondents as well as the re-interviews of respondents from the first two waves.

In order to secure a response to the main research issue of the WAG-study, namely alcohol consumption amongst women, a short form of the interview was constructed as an alternative to participation. The short form of the interview mainly consisted of questions of strictly alcohol related topics and consumption patterns. This option was mostly used with women who did not have the time or motivation to participate in the complete interview. Overall, 14% of all interviews made in the WAG-project were short form interviews and these were excluded from the present study.

Study population

In the present study, the data material was used cross-sectionally. Included in the study are 851 women who participated in the complete interview in 2000. The reason for using only the third interview wave was that the questions concerning the women's present living conditions had been revised between the three waves, in such a way that they reflected more aspects of everyday occupations. As a consequence of the initial selection procedure, and repeated interviews after five years, the sample consisted of homogeneous age groups, each with five years apart from the next. From the original, total sample of the study, we excluded women from the oldest age groups (65- and 75-year-olds) since they, due to their age, did not answer questions on paid employment under the same premises as the other women. Further, the choice was made to categorize the women into a young adult (20- and 25-year-olds) and an adult (30-55 year-olds) age group based on an a priori assumption that the patterns of everyday occupations are partly age-dependent, with older women having more stable patterns with respect to employment and family situation. Thus, the two groups consisted of 474 women aged 20 or 25 years and 377 women between 30 and 55 years of age.

Attrition

From the previously interviewed women, it was possible to contact a total of 1099 in 2000 and 728 of these (66.2%) participated in an interview. From the group of new participants, 358 of the originally stratified group of 491 women born in 1980 (72.9%) agreed to take part in an interview. Due to missing values in some of the included variables, 20 more women were excluded. Thus, from a total group of 1086 participants in 2000, we have used answers from 851 (78.3%) women.

The interview

The semi-structured interview manual included questions about socio-demographic factors, present living conditions, alcohol consumption, and alcohol dependence and abuse. The interviews were in most cases performed face-to-face, conducted by professionals in health and social care.

Patterns of everyday occupations The variables chosen to define the women's patterns of daily occupations were the questions regarding present living conditions (employment status, distribution of household/maintenance work, leisure activities, time for free disposal and satisfaction with each of these four domains). Concerning employment status and household work, the subjects were asked to what extent they were occupied in professional work or studies as well as taking part in ordinary maintenance work. For leisure activities, the subjects were asked, from a list of 37 items (Appendix A), about the specific activities they had performed during the previous year. On the listing, these activities were first classified into four categories (cultural, social, physical and creative). The list was developed and used in a previous wave in the WAG project (12). As regards time for free disposal (based on an ordinary weekday and an ordinary holiday), the women were asked to estimate how much time they had for doing whatever they chose. Lastly, on a 5-point scale, the subjects were asked how satisfied they were with each of these four domains.

Socio-demographic factors Subjects were asked about their present employment situation as well as the household's total income during the previous year. Further, questions were asked

about marital status and about living together with children under the age of 14-years-old. Subjects were also asked about their highest educational level.

Alcohol consumption Concerning alcohol consumption, subjects were asked how often they drank as well as what quantities of alcohol they usually consumed. Based on that information, the following variables measuring alcohol consumption were used: low consumption (drinking less than once per month in the previous year), non-problematic consumption and problematic alcohol consumption. The variable, problematic alcohol consumption included Alcohol Use Disorder (AUD), High Episodic Drinking (HED) and High Alcohol Consumption (HAC). HED was defined as drinking more or equal to 60 g ethanol per occasion, at least once per month, and HAC was defined as drinking on average at least 20 g ethanol/day over one month. These two measurements are constructed from a definition of a standard unit drink based on 12 g of pure alcohol, approximately corresponding to 14 cl of wine or 30 cl of strong beer. The diagnosis of AUD was made using the Composite International Diagnostic Instrument – Substance Abuse Module (CIDI-SAM) (31) and calculated as lifetime and last year's prevalence.

Data analysis

Patterns of everyday occupations The two age groups were analyzed separately. We used Two-Step Cluster analysis to identify clusters on the basis of items pertaining to everyday occupations. In their original form, three of the included variables (employment status, time for free disposal and leisure activities) were not constructed in a homogeneous way with respect to the response options. In order to prevent unequal contributions to the analysis, we converted all answers to a five-step scale ranging from 1-3, with 1 meaning less

activity/satisfaction and 3 meaning more activity/satisfaction. This was done by inspecting the distribution of frequencies in the raw data and by face-validity deciding the natural limits for each scale step. Thus, for the variable 'time for free disposal', scale step 1 equals having ≤ 2 hours spare time on a weekday and ≤ 10 hours during the weekend while scale step 3 equals ≥ 5 hours during a weekday and ≥ 25 hours during the weekend. Variables reflecting leisure activities were constructed for each of the four pre-defined categories (cultural, social, physical and creative), where a score of 1 was set to equal low engagement, 2 medium engagement and 3 high engagement. The variable, 'employment status' (including studying), was converted according to the amount of employment activity, with 100% activity scored as 3, part-time activity scored as 2 and 0% activity scored as 1. For the variable of household/maintenance work and the four questions about satisfaction with the occupational domains, the original five-point scale was converted into scores 1 – 1.5 – 2 – 2.5 – 3.

The number of clusters was chosen by combining both formal criteria and a subjective assessment of meaningfulness of cluster characteristics. Alternatives with 2 to 5 clusters were compared with regard to separation of the means in the included variables. Initially, the formal procedures choose three clusters among the young adult group and two among the older. In a further investigation, the three cluster solution showed higher separation between all included variables concerning both age groups, meaning that all included variables had a stronger influence on the cluster allocation compared with the two cluster model. Since this option also was assessed as giving the most distinct and meaningful description of the identified clusters, we decided finally to use a three cluster solution for both age groups. The cluster method we used is sensitive to the order of the cases in the data set; therefore we re-ran the cluster process several times, with random reordering of the cases between each run. The clusters were then linked over all runs according to degree of agreement. Finally, we classified each case according to the most frequent cluster. The clusters were labeled

according to the levels of their present activities and in this way the respondents' patterns of everyday occupations were operationalized.

Socio-demographic factors The cluster groups were described based on differences in socio-demographic characteristics (employment situation, household's total income, marital status, living with children ≤14 years, educational level) and differences in AUD, HED and HAC. Differences between the cluster groups were analyzed using the Pearson Chi-square test.

Alcohol consumption In addition, Pearson Chi-square was used to test for differences between the cluster groups with respect to different alcohol consumption patterns. The consumption groups were divided into three categories: low consumption, non-problematic consumption and problematic alcohol consumption; the latter being comprised of HAC, HED and AUD. Finally, regression models were used to consider the chosen socio demographic factors as possible explanatory variables concerning the association between the cluster groups and problematic alcohol consumption. The cluster groups deemed most normative with respect to both activity levels, (highly engaged and satisfied) (Figures 1 and 2), and distribution on alcohol consumption groups (Table 2), were chosen as reference groups for the young adult group and adult group respectively.

Results

Patterns of everyday occupations For each age group, we identified three distinct groups with respect to their patterns of everyday occupations.

(Figure 1 in here.)

Among the women aged 20 and 25 years old (Figure 1), the cluster, labeled ***'****Low activity/medium spare time'****,*** comprised mostly part-time employed or studying participants. They typically shared the domestic work with their partner, had a medium amount of spare time left for their own needs and were seldom engaged in leisure activities. They were not very satisfied with any of their everyday occupations. The cluster, *'Varied activity/more spare time'****,*** consisted of employed women who did a large share of the domestic work. They formed the cluster with the highest amount of spare time left for their own needs, but only engaged in leisure activities to a medium extent. This group reported high satisfaction with all their occupational domains. Finally, one cluster in the young adult group, *´High activity/low spare time'****,*** included full-time employed women who to some extent shared the domestic work with another but reported little spare time left for doing whatever they wanted. Even so, they reported high engagement in leisure activities (mostly cultural and creative ones). With the exception of their experience of spare time, these women were satisfied with their ordinary daily life.

(Figure 2 in here.)

Among the adult women, the cluster *'Varied activity/low spare time'****,*** was formed by those who were not fully employed but did a large share of the domestic work and only had some time left for their own needs (Figure 2). These women were not particularly engaged in leisure activities and were more or less dissatisfied with all their occupational domains, except for employment status. The cluster, labeled *'Low activity/more spare time'****,*** encompassed those who were only part time employed, took care of a large part of the domestic work and had plenty of time left for their own needs. Still, they were not engaged in leisure activities to any great extent and they expressed low satisfaction with both their employment status and their leisure time. The women in the '*High activity/medium spare time'* cluster, worked to a

large extent, shared more of the domestic work with someone, but still had little spare time left for their own needs. This group was highly engaged in leisure activities, with their lowest rating being on physical activities, and they were also satisfied with all occupational domains.

(Table 1 in here.)

Cluster differences regarding socio-demographic factors Among the young adult women, the cluster *'Low activity/medium spare time'* had a significantly higher proportion of women with a lower educational level (Table 1). Proportionally, more women were working and this was also the only group where some women were neither studying nor working. Significantly more women were living with children under the age of 14. The *'Varied activity/more spare time'* cluster consisted of more students and more women with a higher educational level. Significantly more women in this group met the criteria for HED. The cluster *'High activity/low spare time'* consisted of more women living with a partner. Also, these women were better educated or still studying. In this group, HED was significantly less common.

Among the women who were 30 – 55 years old, the *'Varied activity/low spare time'* cluster included significantly more cohabiting women with small children at home. The cluster *'Low activity/more spare time'* consisted of older and, more often, single living women. Significantly more women in this group had a low education and were neither working nor studying, and lower incomes were more common. More women also responded to HAC, HED and AUD. The cluster '*High activity/medium spare time'* consisted of younger women with better education and higher incomes.

(Table 2 in here.)

Cluster differences regarding alcohol consumption We found significant differences between the clusters with respect to alcohol consumption (Table 2). In the young adult group, there were significantly more women with low alcohol consumption in the *'Low activity/medium*

spare time' cluster and significantly more women (42.9%) with problematic alcohol consumption in the *'Varied activity/more spare time' cluster.* Women drinking in a non-problematic manner were significantly more frequent in the cluster characterized as *'High activity/low spare time',* compared to the other two clusters. This latter cluster could be described as having normally distributed alcohol consumption. In all three clusters of young adult women, problematic alcohol consumption was higher than 30%.

Among the women between 30 and 55 years of age, the level of problematic alcohol consumption ranged from 14.0% to 28.3%. The group named *'Varied activity/low spare time'* had a significantly larger proportion of women with low alcohol consumption, whereas the *'Low activity/more spare time'* cluster had a significantly higher proportion of women with problematic alcohol consumption (28.3%).

(Table 3 in here.)

In order to further examine the association between the patterns of everyday occupations and risky alcohol consumption, problematic alcohol consumption (previously defined) was used as the dependent variable in regression models (Table 3). In the young adult subgroup, there was a non-significant tendency for problematic alcohol consumption in the cluster *'Low activity/medium spare time',* and a more than two-fold significant risk of problematic drinking in the cluster *'Varied activity/more spare time'*. As regards the adult women, a slightly different trend was seen. Although not statistically significant, the risk of problematic consumption was lower in the cluster *'Varied activity/low spare time'* and higher in the cluster *'Low activity/more spare time'*. None of the findings changed when controlling for age and other socio-demographic covariates.

Discussion

Three distinct clusters of women with respect to patterns of everyday occupations were found in both age groups. Each cluster showed specific characteristics but some similarities between the age groups could be identified. One cluster type consisted of women, having a family, with low engagement, especially in leisure activities, who were dissatisfied with most domains in their everyday life. The single-living women in the next cluster type reported low engagement in leisure activities combined with a large amount of spare time. This cluster type deviated in one aspect between the age groups, with the older group being more dissatisfied compared to their younger counterparts. The final cluster type consisted of women who, in spite of a low amount of spare time, were highly engaged in and satisfied with their everyday occupations. These findings respond to the first aim of the study; identifying different patterns of everyday occupations. A similar approach was used in a study on women's work-life balance and life satisfaction (16). By including components from interacting life domains, such as leisure time, as well as the individuals' own evaluation of the same domains, the author suggested categorizing within a wider framework describing women's lives. The development of a typology of work-life balance was outlined, with potential imbalances exemplified, such as integrating too many domains or the fragility of one major life domain.

Turning to the associations with alcohol consumption, some significant differences between clusters were found. Among the young adult women, we found an overall, higher problematic alcohol consumption in all three clusters, compared to the adult subgroups. The high amount of alcohol consumed in the younger group corresponds with studies on trajectories of alcohol use, reporting a high alcohol consumption around 20 years of age with a decline thereafter (32-33). Different factors, such as the early onset of regular drinking, binge drinking, educational achievement or aspects of the social environment, have been highlighted as explanations for staying in a more persistent problematic drinking pattern. In

our study, more women drinking in a problematic way, in both age groups (20 and 25/30-55 years old), were found in the clusters with low or medium engagement in leisure activities and with more spare time available.

For the young adult women, this more than two-fold risk of problematic alcohol consumption in the *'Varied activity/more spare time'* cluster, remained significantly stable through all the regression models, indicating that engagement in different everyday occupations has a stronger impact on drinking behaviour than socio-demographic factors such as income, marital status or education. In spite of a high prevalence of problematic drinking, the young adult women reported high satisfaction with their everyday occupations. This finding implies that problematic drinking as defined in our study is not perceived as such by the young women themselves. One explanation could be that drinking even large amounts of alcohol has not, (yet) led to any negative effect on the pursuit of a satisfactory everyday life. Another possibility is that the cut-off limit for problematic drinking, as used in our study, is too sensitive a measure for this young group of women. Subsequently, some of these women will never develop negative consequences from alcohol consumption nor develop a more problematic drinking behaviour. The association between problematic alcohol consumption and satisfaction could further be discussed by considering the role of alcohol in the different activities constructing everyday life. Alcohol drinking could be a part of the social context of the lives of single living students and render positive outcomes, such as better time with friends, less tension or easier socializing, which was shown in another study (34). Consuming alcohol could also be experienced as a solitary, enjoyable leisure activity, such as when drinking for fun at bars or at parties. Such an approach could be related to results from a study on alcohol-related and alcohol free activity participation among college students, which showed that students enjoyed alcohol related activities more than non-alcohol related activities (35). The authors suggested that lack of enjoyable alcohol-free activities, combined

with unoccupied free time, could increase alcohol consumption. In our study, the women in the *'Varied activity/more spare time'* cluster were satisfied without being engaged in leisure activities to any high extent; thus implications about the availability and value of alcohol-free activities, as well as the impact of unstructured leisure time, seem appropriate.

In contrast to their younger counterparts, the cluster of adult women that included more problematic drinkers reported low engagement in employment and low satisfaction with leisure and employment. This latter finding is comparable to an American study on life satisfaction and health habits, where heavy drinking was associated with being dissatisfied (36). A similar result was also acknowledged in a previous study, where women's dissatisfaction with their educational level had a stronger association with the risk for AUD compared to the educational level itself (11). These adult women, many of them older, single living and unemployed, could be described as having a lack of satisfying engagements. One explanation for dissatisfaction could be that when transcending into more adult life stages, this pattern of everyday occupations, including more frequent drinking habits, is no longer experienced as an age appropriate or desirable life style. Moreover, the more than doubled risk for problematic drinking in this subgroup did not stay significant in the final regression models and could probably be better explained by the variable of living with or without small children. Caring for young children has previously been shown as being associated with a lower risk for AUD (11). Other studies, both within and outside the field of alcohol research, have reported more complex associations concerning a motherhood role and outcomes in health, life satisfaction or problematic drinking (7, 13, 16). Having a motherhood role, combined with other social roles, influenced heavy drinking differently across countries (7). In Germany the highest rates of heavy drinking were found among single, working mothers with children whereas in Finland the rates were highest among young women with neither a family nor a work role. Having children generated both hassles (such as worries and conflicts)

and uplifts (e.g. happiness and affection) in working mothers' evaluations of their everyday lives (13). Finally, mothers reported lower levels of satisfaction with leisure and social lives but higher levels of satisfaction with life as a whole (16).

There were significantly more women abstaining or scarcely consuming alcohol in the cluster groups with varied or low degrees of activity, less spare time and displaying dissatisfaction with their situation. This could be described as an everyday pattern, with a lack of meaningful engagement in occupations, combined with environmental demands (e.g. motherhood) or disturbances, leading to dissatisfaction or, with reference to other studies (14, 37), to stress and lower self-reported health. In our study, problematic alcohol consumption was not associated with living under strained or disadvantaged life circumstances. A similar result was found in a Swedish study on middle-aged women where the abstaining group was found to have both lower education and poorer conditions with respect to social situation and health. Drinking to relieve tension was more common in a binge drinking group with severe mental symptoms (38).

Finally, in both age groups, we identified a cluster consisting of women satisfied with their engagement in all occupational domains. Neither problematic drinking nor low alcohol consumption was common among these women. With respect to research on social roles, and assuming that these women in their everyday occupations also had the roles of a partner, a caregiver and an employee, this result to some extent confirms previous findings concerning a greater number of roles and lower prevalence of heavy drinking (8). However, studies on social or family roles and alcohol consumption have often been analyzed from a societal level (e.g. the social position of women) (2) or have focused on how a combination of roles, influenced by social stratification (e.g. education, income), or cultural factors could explain differences in drinking habits (7, 39). Our study contributes to studies on the role of alcohol in women's lives, by adding perceived satisfaction and degree of engagement to the analyses of

different occupations (roles) and drinking. The importance of such aspects were confirmed in a study of role balance and health (14). In addition, we would propose that this pattern of everyday occupations with high engagement in activities and high satisfaction could be understood as being in occupational balance, described as perceptions of a satisfactory combination of daily occupations corresponding to individual needs and desires (19-20, 40-41). Moving from an activity perspective, as in our study, to a role perspective, the concept of occupational balance could be compared with a hypothesized concept of role deprivation (42). Role deprivation (e.g. in employment or marital roles) was outlined as one explanation for a woman's development into more problematic drinking habits (28).

When discussing the main findings with respect to the second aim of this study, namely to analyze the associations between women's patterns of everyday occupations and alcohol consumption, other explanations and limitations need to be considered. No early risk factors were added to the analyses and it cannot be ruled out that other factors, such as the early onset of regular drinking or family background factors, could be of relevance to explaining both problematic alcohol consumption (32) and the development of different occupational patterns. Using a cross-sectional approach does not allow us to draw conclusions about the causal effects between drinking and different patterns of everyday occupations. Without the possibility of determining whether everyday occupations lead to specific consumption behaviours, our findings still can be said to contribute to a new understanding of drinking habits. As regards an interactive model of human behaviour, such as the CMOPE model, factors from the personal, environmental and occupational domains supposedly contribute to explaining behavioural outcomes, and an alteration in any domain (e.g. the environment) supposedly leads to behavioural change. The variables chosen for defining the occupational patterns in the present study were not originally constructed for that purpose. Thus, it is possible that we have not captured all aspects of an everyday life by these

questions. Still, one strength of the study is the novel application of integrating several life domains in the field of alcohol research, leading to a more extensive exploration of alcohol consumption in women's lives. Furthermore, this knowledge can open up new, multimodal approaches, aimed at changing problematic drinking habits.

To summarize, we found a strong association between problematic alcohol consumption and patterns of everyday occupations characterized by low engagement in leisure activities and a large amount of spare time. When planning for preventive and treatment actions, the findings provide new options and ideas. On a societal level, one example would be providing alcohol-free activity areas. On the individual level, another example would be finding suitable and engaging activities in several everyday domains, as opposed to focusing on specific risk factors. When supporting women in not developing additional negative alcohol consumption habits, discussing the role of alcohol consumption in the performance of different everyday activities could prove to be of great importance. Occupational therapists, with a specific knowledge of engagement in occupations, both on individual and population levels, could contribute in this endeavor.

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Table 1. Distribution of demographic characteristics and alcohol consumption between cluster groups. Frequency counts, percentages.

Women 20 and 25-years old (n=474)				
	Cluster 1 Low act[1]/ medium ST[2] n=157 (33.1%)	Cluster 2 Varied act /more ST n=168 (35.4%)	Cluster 3 High act /low ST n=149 (31.4%)	P value, χ^2 test (df)
Age				
20 years	61.8	58.9	54.4	NS (2df)
25 years	38.2	41.1	45.6	
Married/cohabitant	45.9	43.7	58.4	0.021 (2df)
Children < 14 years	13.8	3.2	6.9	0.002 (2df)
Education				
Elementary school	10.3	5.4	4.0	0.002 (4df)
High school	71.2	61.3	58.4	
College/university	18.6	33.3	37.6	
Studying	8.2	51.8	55.7	<0.0001 (4df)
No occupation	5.7	0.0	0.0	
Income				
Low	43.9	51.2	49.7	NS (2df)
High	56.1	48.8	50.3	
12HED, ly[3]	31.8	38.7	24.8	0.031 (2df)
HAC, lm[4]	17.2	19.0	12.8	NS (2df)
AUD, ly	7.0	9.5	7.4	NS (2df)
Women 30 to 55-years old (n=377)				
	Cluster 1 Varied act/ low ST n=157 (41.6%)	Cluster 2 Low act/ more ST n=92 (24.4%)	Cluster 3 High act/ medium ST n=128 (34.0%)	P value, χ^2 test (df)
Age				
30 years	49.7	50.0	64.8	0.032 (6df)
35 years	18.5	12.0	9.4	
45 years	16.6	13.0	10.2	
55 years	15.3	25.0	15.6	
Married/cohabitant	84.7	48.9	85.9	<0.0001 (2df)
Children < 14 years	67.5	19.5	28.0	<0.0001 (2df)
Education				
Elementary school	8.3	22.8	3.9	<0.0001 (4df)
High school	38.9	32.6	27.3	
College/university	52.9	44.6	68.8	
Studying	8.3	6.5	7.0	<0.0001 (4df)
No occupation	3.2	21.7	0.0	
Income				
Low	48.4	66.3	43.8	0.003 (2df)
High	51.6	33.7	56.3	
12HED, ly	12.1	25.0	8.7	0.002 (2df)
HAC, lm	2.5	15.2	7.8	0.001 (2df)
AUD, ly	0.6	9.8	1.6	<0.0001 (2df)

[1]Act=activity, [2]ST=Spare time, [3]ly=last year, [4] lm=last month,
AUD, Alcohol Use Disorder; HED12, High Episodic Drinking or HAC, High Alcohol Consumption

Table 2. Occupational patterns and alcohol consumption in 2001. Column percentages.

Women 20 and 25-years old (n=474)						
	Total n=474	Cluster 1 Low act[1]/ medium ST[2] n=157 (33.1%)	Cluster 2 Varied act /more ST n=168 (35.4%)	Cluster 3 High act /low ST n=149 (31.4%)	χ^2 test df=4	P-value
Low alcohol consumption	23.8	**31.8**	21.4	18.1	17.231	0.002
Non-problematic alc. cons. [3]	38.8	31.2	35.7	**50.3**		
Problematic alc. cons.[4]	37.3	36.9	**42.9**	31.5		
Women 30 to 55-years old (n=377)						
	Total n=377	Cluster 1 Varied act/ low ST n=157 (41.6%)	Cluster 2 Low act/ more ST n=92 (24.4%)	Cluster 3 High act/ medium ST n=128 (34.0%)	χ^2 test df=4	P-value
Low alcohol consumption	23.1	**27.4**	23.9	17.2	15.231	0.004
Non-problematic alc. cons.	59.4	58.6	47.8	**68.8**		
Problematic alc. cons.	17.5	14.0	**28.3**	14.1		

[1]Act=activity, [2]ST=Spare time, [3]alc. cons=alcohol consumption, [4]Problematic alc.cons. including AUD, Alcohol Use Disorder; HED, High Episodic Drinking and HAC, High Alcohol Consumption. Highest prevalence in bold font.

Table 3. Associations between patterns of everyday occupations and problematic alcohol consumption. Ordinal regression. Odds Ratios for cluster groups (I), controlling for age (II) and socio-demographic covariates (III). (Confidence Intervals)

Women 20 and 25-years old (n=474)									
	I			II			III		
	Cluster 1 Low act[1]/ medium ST[2] n=157 (33.1%)	Cluster 2 Varied act /more ST n=168 (35.4%)	Cluster 3 High act /low ST n=149 (31.4%)	Cluster 1 Low act[1]/ medium ST[2] n=157 (33.1%)	Cluster 2 Varied act /more ST n=168 (35.4%)	Cluster 3 High act /low ST n=149 (31.4%)	Cluster 1 Low act[1]/ medium ST[2] n=157 (33.1%)	Cluster 2 Varied act /more ST n=168 (35.4%)	Cluster 3 High act /low ST n=149 (31.4%)
Problematic alcohol consumption	1.61(0.89-2.92)	2.12(1.24-3.95)	1.0	1.56(0.86-2.82)	2.19(1.21-3.94)	1.0	1.51(0.81-2.81)	2.13(1.16-3.91)	1.0
Women 30 to 55-years old (n=377)									
	I			II			III		
	Cluster 1 Varied act/ low ST n=157 (41.6%)	Cluster 2 Low act/ more ST n=92 (24.4%)	Cluster 3 High act/ medium ST n=128 (34.0%)	Cluster 1 Varied act/ low ST n=157 (41.6%)	Cluster 2 Low act/ more ST n=92 (24.4%)	Cluster 3 High act/ medium ST n=128 (34.0%)	Cluster 1 Varied act/ low ST n=157 (41.6%)	Cluster 2 Low act/ more ST n=92 (24.4%)	Cluster 3 High act/ medium ST n=128 (34.0%)
Problematic alcohol consumption	0.53(0.22-1.26)	2.00(0.75-5.35)	1.0	0.56(0.23-1.34)	2.17(0.79-6.00)	1.0	0.85(0.32-2.20)	1.71(0.63-4.70)	1.0

[1]Act=activity, [2]ST=Spare time.

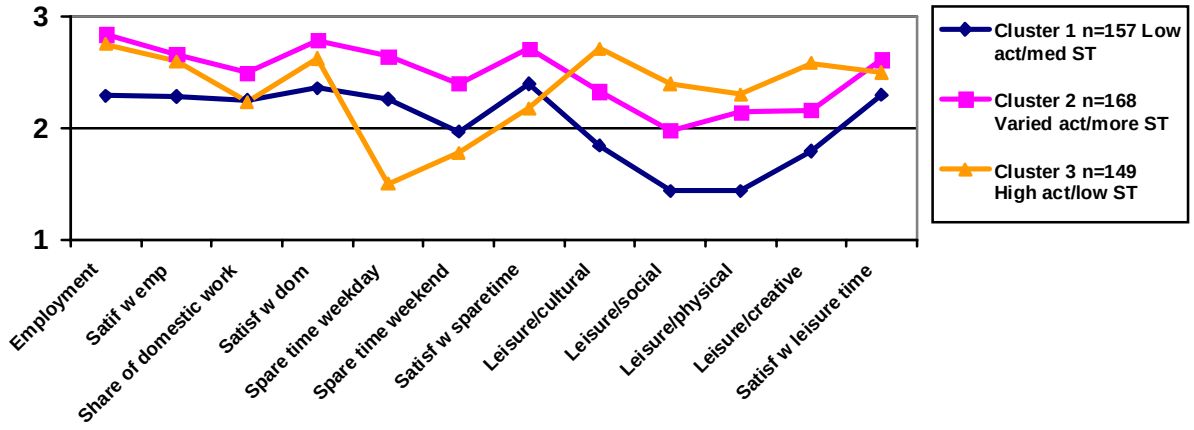

Figure 1. Clusters of patterns of everyday occupations, women 20 and 25 years (n=474)

[1]Act=activity, [2]ST=Spare time,

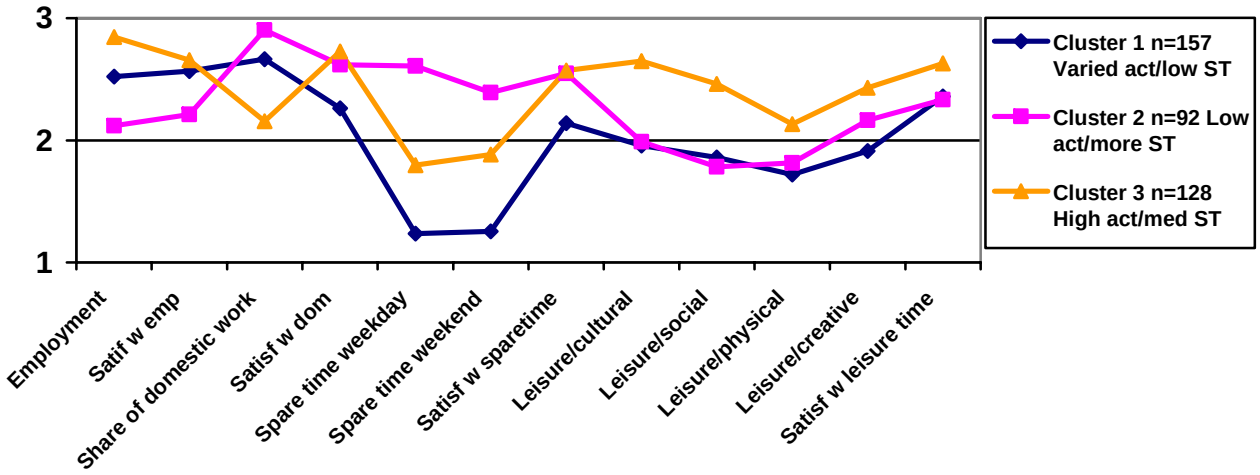

Figure 2. Clusters of patterns of everyday occupations, women 30 - 55 years (n=377)

[1]Act=activity, [2]ST=Spare time,