

Time-Use and Mental-Health in Aged

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Time-use of older adults can be different than in earlier life, especially during the transition from pre- to post-retirement or after experiencing major life events, and the changes could affect their mental health.

Keywords: time use ; daily diary ; mental health ; depression ; happiness

1. Introduction

The time-use study aims to examine how a person occupies time. Although identification of time-use in older adults has been labeled as an important direction, literature on how older adults spend their time still lacks, especially in Asian countries ^[1]. Population aging across the world causes implications not only for the disease burden but also for the social and healthcare system ^[2]. For instance, the number of older people with mental disorders is expected to double by 2030, and statistics have shown that approximately 15% of older adults aged 60 and above experience mental disorders, such as depression, anxiety, isolation, or dementia ^[3]. There is compelling evidence that being active in old age is associated with good mental health. For example, several studies have concluded that physical activity reduces the risk of depression in older adults ^{[4][5]}. Moreover, physical activity is also associated with better optimism, life satisfaction, positive affect, and psychological wellbeing in older adults living with loneliness ^[6].

2. Time-Use and Mental Health in Older Adults

2.1. Demographic, Time-Use and Mental Health

Adjei and colleagues examined the sex differences in the relationship between work-related time-use and stress ^[7]. They found that both older men and women reported higher levels of stress with increasing time-use in managing housework. Moreover, the negative relationship between paid work and stress was only found in older men ^[7]. Hahn and colleagues examined the differences in daily time-use and wellbeing in widowed and married older women ^[8]. They did not find any differences in daily time-use for most of the activities. Widowed women spent more time accompanying their children and watching television and less time sleeping than married women. No difference was noted in wellbeing between widowed and married older women ^[8].

2.2. Changes in Time-Use and Mental Health

Changes in time-use and their association with mental health could be examined using a longitudinal design. Olds and colleagues examined the time-use, depressive symptoms, life satisfaction, wellbeing, and self-esteem of mature workers pre- (6-month before) and post- (3-, 6-, and 12-month after) retirement ^[9]. Retired individuals spent more time on household chores, sleeping, screen time, and quiet time during retirement. Changes in overall time-use were significantly associated with lower depression and stress, as well as higher self-esteem. Replacing working time with physical activity and sleep was associated with improvements in all measures of mental health ^[9]. Lee and colleagues investigated the relationships between activity diversity, wellbeing, depression, positive and negative affects by following up on a group of respondents from different age groups for 10 years ^[10]. The study summarized that increased activity diversity in older adults was associated with greater psychological wellbeing and positive affects and decreased negative affects compared to younger respondents ^[10].

2.3. Work Status, Types of Activities and Mental Health

Tadic and colleagues examined the role of work status in the relationship between time-use and happiness in older adults ^[11]. Overall, non-working older adults were happier than older individuals who were working. Working older adults reported lower levels of happiness with higher time spent in administrative duties. Regardless of work status, engaging in leisure activities was associated with higher levels of happiness. In addition, working older adults reported higher levels of

happiness on weekends compared to weekdays ^[11]. Jennings and colleagues examined the relationship between time-use in different activities (physical, mental, and social) and memory performance ^[12]. Results showed that physical activity was positively associated with memory performance but not social and mental activities ^[12].

2.4. Activity Profiles and Mental Health

Chen and colleagues identified activity patterns and the natures of engagement of older participants by using the time-use data and correlated the activity profiles with cognitive function, depressive symptoms, and self-rated health ^[13]. They identified five patterns of activity—"high", "moderate", "low", "passive leisure", and "working," as well as three natures of engagement—"full", "partial", and "minimal" engagement. Older adults who were in the "high" and "working" group reported better self-rated health, cognitive function, and lower depressive symptoms than those of the "passive leisure" group. Older adults in the category of "low" activity with "full" engagement reported higher levels of self-rated health than older adults in the "passive leisure" group. Older adults in the category of "moderate" activity, "high" activity, and "working" group reported lower levels of depressive symptoms only when they are fully engaged in an activity ^[13].

Morrow and colleagues identified the sample's activity profiles using time-use data and explored the relationships between activity profiles, self-reported health, and depressive symptoms ^[14]. They categorized respondents based on five activity profiles—"low activity", "moderate activity", "high activity", "working", and "physically active". Findings showed that older adults in "high activity", "physically active", and "working" groups reported better self-reported health than those in the "low activity" group. Moreover, respondents in the "low activity" group reported higher depressive symptoms than all other groups ^[14]. Prigerson and colleagues examined if lifestyle regularity was associated with lower levels of depressive symptoms in older adults who just lost their spouse ^[15] and found that lifestyle regularity was associated with lower depressive symptoms in subjects with Activity Level Index higher than 80 at 12- and 24-months post-loss ^[15].

3. Suggestions for Future Research on Time-Use and Mental Health

(i) although there is a substantial challenge to collect time-use data accurately across the range of daily activities, it is advisable to collect time-use data by larger time intervals (every 30–45 min) to capture the duration of each activity adequately and improve recall accuracy, (ii) other information of activity, such as with whom and where an activity was performed should also be collected to capture information on loneliness, social isolation, and social interaction, (iii) make full use of the time-use data by performing cluster analysis to generate other information, such as activity levels and patterns, (iv) measuring mental health outcome using a validated and reliable instrument, (v) consider examining the relationship between time-use and mental health using longitudinal study design and proper statistical analysis approach, and (vi) research on time-use and mental health in older adults should be given more attention in Asia and other low- or medium-income countries.

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