

## Review Article

Adjustment to Aging in Late Adulthood: A Systematic Review<sup>☆</sup>Sofia von Humboldt<sup>\*</sup>, Isabel Leal

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## SUMMARY

**Background:** This systematic review aims at providing a trustworthy overview of the concept of adjustment to aging (AtA) in late adulthood.

**Methods:** A computerized literature search was carried out, and PubMed/Medline, Psychology and Behavioral Sciences Collection, and Scielo databases were searched for studies published from 1981 to 2012. Studies must have investigated AtA in old age.

**Results:** Thirteen articles from 1291 records met the inclusion criteria, with a total of 1156 participants aged  $\geq 60$  years. There are rather consistent findings that older adults develop active and adaptive strategies during AtA, and that psychological variables, engagement with significant others, and social and temporal processes of comparison have a relevant role in AtA among older populations.

**Conclusion:** The findings presented here contribute to a better understanding of AtA and its multidimensionality. These may be a starting point for further research in this insufficiently explored field.

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## 1. Introduction

Population aging is progressing rapidly in both industrialized and developing countries. The elderly population is projected to grow from 6.9% of the population in 2000 to 19.3% in 2050<sup>1</sup>. Furthermore, the average annual growth rate of the number of persons aged  $\geq 80$  years is 4.0%, currently being  $> 50\%$  higher than that of the population aged  $\geq 60$  years (2.6%)<sup>2</sup>.

As individuals live longer, the quality of that longer life becomes a central issue for both personal and social well-being<sup>3</sup>. Likewise, due to this growing number, new approaches, focused on aging well, should be developed for the elderly<sup>4</sup>.

It is generally accepted that as a person ages, his or her experiences acquired over their life time, ways in dealing with the environment, economic and social resources, relationships, and support systems can impact on his or her longevity and well-being profoundly<sup>5</sup>. Moreover, as adults reach late adulthood, they are more likely to be challenged with physical, mental, and social changes<sup>6</sup>. Furthermore, some authors suggested that older adults showed multiple attitudes toward aging<sup>7</sup>. Additionally, aging well

involves the flexible use of adaptive strategies, to optimize personal functioning and well-being within the constraints of personal competence and resources<sup>8</sup>.

Adjustment to aging (ATA) was initially defined by Cattell<sup>9</sup> as the goodness of internal arrangements by which an adaptation is maintained; Williams et al<sup>10</sup> proposed that this concept was dependent on an individual's state of mind and subjective psychological reactions. Bearing in mind the relevance of internal arrangements for AtA, we addressed the multidimensionality of AtA, considering the internal arrangements within personality types and theoretical models. In this context, two early theoretical models explained AtA: the activity theory<sup>11</sup> and the disengagement theory<sup>12</sup>. Rosow<sup>13</sup> suggested that AtA was best viewed as a dynamic phenomenon and it relied on the concept of equilibrium. Furthermore, Havighurst<sup>14</sup> conducted empirical research and proposed that AtA was a dynamic process, which encompassed a goodness of fit between personality, social environment, and physical organism. This author regarded personality as the pivotal dimension in describing patterns of aging, and in predicting relationships between the level of social role activity and satisfaction with life. Moreover, Havighurst et al<sup>15</sup> defied disengagement theory by suggesting that consistency of personality increased with age. For these authors, the personality that remained integrated in late adulthood reflected an internal arrangement, a high degree of satisfaction with life, and an adequate AtA<sup>15,16</sup>. McMordie<sup>17</sup> also challenged the disengagement theory by suggesting that the

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withdrawal phenomenon exhibited by older adults simply reflects reduced environmental opportunities for social interaction. Despite a reduced social sphere and the prevailing negative attitudes of old age, older adults make a satisfactory adjustment to their later years. Additionally, in that study, the level of AtA was determined based on their intimate relationships with others and the self-concept<sup>17</sup>.

Later, the identity process theory<sup>18</sup> proposed that ATA can be conceptualized based on the three processes of identity assimilation, identity accommodation, and identity balance, whereas Brandstädter and Renner<sup>19</sup> found that older cohorts tended to report more accommodative strategies than younger ones. Furthermore, according to Brandstädter and Greve's<sup>20</sup> model, ATA involves the adjustment of a person's goals and aspirations in the face of age-related challenges and corresponds to what the authors named "accommodation". Atchley<sup>21</sup> referred to continuity as the ability of older persons to maintain a strong sense of purpose and self, in the face of the changes associated with aging. More recently, Wrosch and colleagues<sup>22</sup> examined the emotional, biological, and physical benefits derived from adaptive self-regulation of challenges in the process of AtA. For these authors, goal adjustment is associated with a high level of well-being in late adulthood, namely by facilitating adjusted levels of activity<sup>23–25</sup>.

To date, insufficient attention has been paid to investigating AtA in late adulthood. Yet studying AtA is pertinent because older adults, in particular the oldest old, experience specific aging challenges<sup>26</sup>.

Late adulthood encompasses a wide range of ages; people in their late adulthood can be divided into three groups: namely the young-old (60–69 years), the middle-aged old (70–79 years), and the old-old ( $\geq 80$  years). Nevertheless, there has been no general agreement among cultures on the age at which a person becomes old<sup>1–3</sup>. Late adulthood is the final stage of life span development, and it is characterized by declines that occur in association with the process of aging in several aspects of development, namely sensory deprivation, memory difficulties, degeneration of physical functioning and organ systems, as well as by role changes in social relationships, family, and work, among others. Additionally, older adults usually have one or more chronic conditions that require medical attention, such as cardiovascular disease. Yet aging in late adulthood also presents specific challenges to maintaining an active, stimulating mental life and social integration<sup>26–28</sup>.

Our goal is to facilitate a better understanding of the multidimensionality of the AtA concept; in this way, this review aims to systematically examine studies investigating the construct of AtA. For the purpose of this review, AtA will be regarded only in the perspective of older adults. This review will try to deepen AtA by assessing empirical studies on this construct. Thus, based on our critical review of gerontological literature, we will summarize research on AtA. This systematic review will be concluded by identifying its limitations, to inform future research.

## 2. Materials and methods

### 2.1. Search strategy

Scoping searches were performed initially to identify relevant search terms and key words, followed by a broad comprehensive literature search of Google Scholar, PubMed/Medline, Psychology and Behavioral Sciences Collection, and Scielo databases. These databases were chosen because they cover a range of perspectives and, thus, were likely to produce a comprehensive set of studies on the topic area and to minimize the chances of missing relevant papers. The search was carried out with the following parameters: since January 1981 to December 2012, with the terms (adjustment) AND (aging) AND (older OR senior OR later life OR late life OR late

adulthood) in the title, abstract, or keywords. Studies were included in the review if they met all four of the following criteria: the article was available; the study addressed the subject of AtA; the article was published in English, Portuguese, or Spanish; and the study population was clearly above 60 years of age.

Studies were excluded from the review if they met any of the following criteria: AtA was combined with other constructs and it was not possible to effectively distinguish the concept of AtA; the age group included participants who were under 60 years of age; and the study was found in gray literature.

All these criteria were applied independently to the full text of the articles that had passed the first eligibility screening, in order to make a final selection of the studies for the review. The authors interpreted the topic of AtA broadly because the aim of this review is to cover the multidimensionality of AtA in late adulthood. Additionally, reference lists of all included articles were reviewed, after being checked against the inclusion criteria. References that met the inclusion criteria were critically appraised.

Different research paradigms underline quantitative and qualitative studies. In particular, quantitative research uses the deductive or confirmatory scientific method, and it is used for description, explanation, and prediction, with the goal of generalizing the results. Conversely, in qualitative research, the inductive exploratory method is used, for the purposes of description and exploration and for gaining an understanding of individuals' experiences; thus, generalization is not its objective<sup>29,30</sup>.

In the absence of a standard quality assessment tool suitable for use with a variety of study designs, the methodological quality of the research papers meeting the inclusion criteria was assessed by implementing two scoring systems: one for quantitative studies and one for qualitative studies. Our scoring systems draw upon existing published tools, trusting particularly on the instruments developed by Timmer and colleagues<sup>31</sup> for quantitative studies and on the guidelines indicated by Mays and Pope<sup>32</sup> for qualitative studies. Fourteen different items for the quantitative studies and 10 for the qualitative studies were scored depending on the degree to which the specific criteria were met ("yes" = 2, "partial" = 1, and "no" = 0), with a higher score indicating greater quality research.

Discrepancies were resolved through discussion, and a final coresolution for each paper was agreed by both researchers. Reliability between researchers was measured using the Cohen's kappa. The final resolutions concerning the articles showed a kappa value of above 0.80 ( $k = 0.810$ ), indicating a high agreement rate. No missing ratings were reported in this study. Fig. 1 summarizes the above literature search process.

The Portuguese Foundation for Science and Technology and ISPA—Instituto Universitário, Lisbon, Portugal approved the study.

## 3. Results

Literature searches located 663 references in the PubMed/Medline database, 603 in the Psychology and Behavioral Sciences Collection database, and 25 in the Scielo database. In total, 1291 potential references were retrieved for inclusion in the study. Of these, 1280 references were excluded because the studies did not meet the inclusion criteria. Additionally, reference lists of all included articles were reviewed, and two additional articles<sup>33,34</sup> were identified and included, after being checked against the inclusion criteria.

A total of 13 references met the inclusion criteria, all being peer-reviewed empirical studies. These were included in this systematic review (see Table 1)<sup>33–45</sup>.

The quality of the studies varied, with eight being rated as good/high quality ( $> 0.75$ ) and five as medium/fair quality (0.50–0.75), based on the total score that varied between 0 and 1. Scores for all the studies can be seen in Table 1.

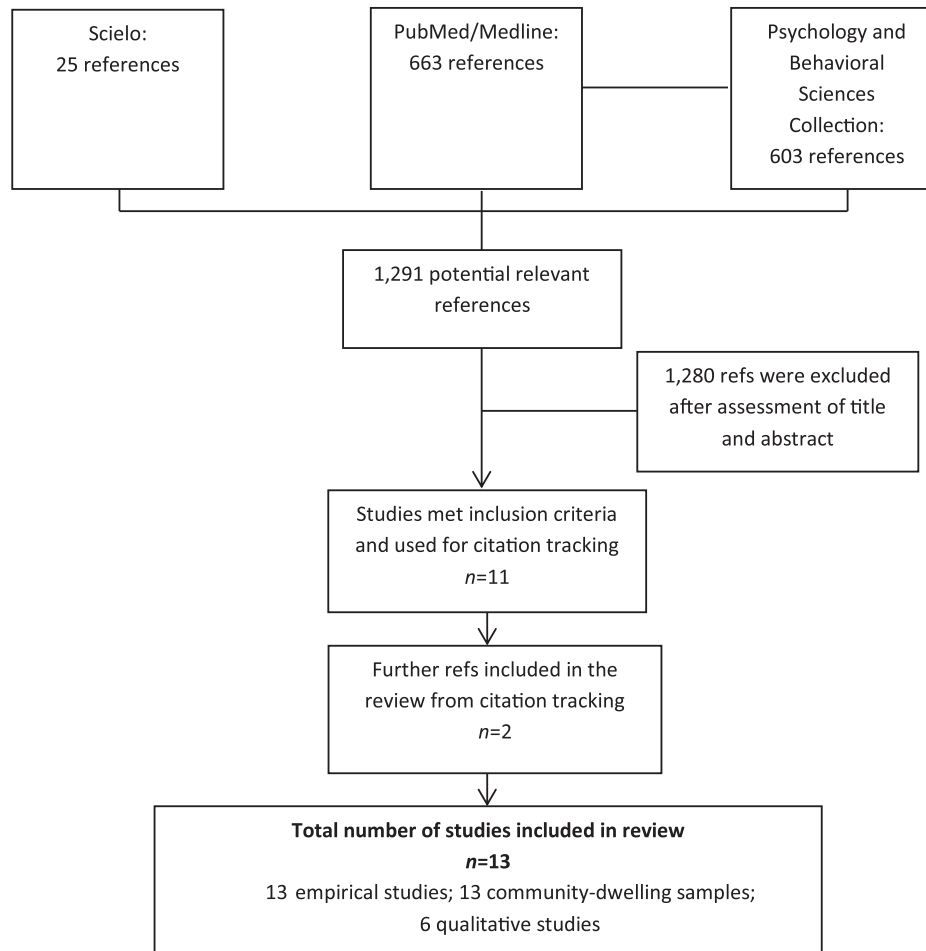


Fig. 1. Overview of literature search and retrieval.

Furthermore, six were qualitative studies, indicating this as the most commonly used study design. Additionally, two were quasi-experimental studies, one cross-sectional study, one mixed methods study, one case-control study, one case study, and one longitudinal study.

Moreover, seven studies used convenience sampling, one analytic sampling, and five purposeful sampling. The majority (7/13) of the selected studies were published prior to 2000. Most of the studies were conducted in the context of Western culture and in developed regions (Australia, Germany, Israel, The Netherlands, USA, and Sweden). Only three were conducted in developing regions (Argentina, Brazil, and Iran).

In total, 1156 people aged  $\geq 60$  years were included in this review, all of whom were community-dwelling noninstitutionalized older adults. Four studies included only elderly women<sup>35,37,40,41</sup> and one included only elderly men<sup>36</sup>. No study included older adults from diverse racial/ethnic groups. Additionally, one study comprised Holocaust survivors<sup>40</sup>.

The approach to the construct of AtA in the studies varied greatly. Strategies for AtA were the most investigated variables in the review, namely, active and adaptive strategies<sup>41</sup>, identity assimilation<sup>44</sup>, and problem- and emotion-focused strategies<sup>35</sup>. Moreover, older adults evidenced positive self-views through selective social and temporal comparison processes (e.g., psychological, physical health, and situational factors) in their self-rated AtA<sup>42</sup>.

In one study, seven patterns of AtA emerged (e.g., self-realizing, mature aging, adapting, dependent, resignedly accepting, despairing, and withdrawing)<sup>38</sup>. Frequency of hassles and negative

life events, and perceived self-efficacy were related to AtA in two studies<sup>33,34</sup>. Additionally, response efficacy and self-efficacy were also found to be related to AtA<sup>43</sup>. In one study, mental and emotional engagements with the present and the past were related to AtA<sup>36</sup>. One study that specifically focused on women with childhood trauma found that these women showed more post-traumatic symptoms, less satisfaction with their life, more cognitive impairment, and more stress when adjusting in old age<sup>40</sup>.

Moreover, Battini and colleagues<sup>37</sup> suggested that autonomy, self-acceptance, support network, and religious beliefs positively influenced AtA, whereas aging denial, isolation, conformist mystical religious posture, and present alienation negatively influenced AtA. One study found that older adults with poorer AtA could be most affected by minor impairments<sup>39</sup>. Finally, one study indicated that AtA was achieved when a balance has been attained between the cognitive and motivational systems of the individuals<sup>45</sup>.

#### 4. Discussion

Although a limited number of studies analyzing AtA among the elderly were found, the literature reflected a growing and widespread interest in understanding what AtA means to older adults. This is supported by recently published research (within the past decade) from around the world.

All the studies in our review were performed in the community that corroborates growing research, which suggests that aging well should be promoted within the community<sup>46</sup>.

**Table 1**  
Characteristics of the empirical studies.

| Study  | Country     | Language   | N   | Age (y) | Design  | Sample             | Sampling  | Findings  | Quality rating |
|--|-------------|------------|-----|---------|---|--------------------|---|---|----------------|
| Bagheri-Nesami et al (2010) <sup>35</sup>            | Iran        | English    | 19  | 65+     | Qualitative with semistructured interviews              | Community dwelling | Purposeful and theoretical sample and observation   | Participants used problem-focused (e.g., problem solving, spending leisure time, confrontation) and emotion-focused (e.g., self-control, distancing, praying, avoidance, and escape) strategies for their AtA.  | 0.75           |
| Bar-Tur et al (1998) <sup>36</sup>                   | Australia   | English    | 60  | 63+     | Mixed methods design                                    | Community dwelling | Convenient sample recruited through various civic and social organizations  | Mental and emotional engagements with significant others were related to well-being and AtA in older men.   | 0.86           |
| Battini et al (2006) <sup>37</sup>                   | Brazil      | Portuguese | 1   | 65      | Case study  | Community dwelling | Convenient sample   | Psychological variables such as autonomy, self-acceptance, and supportive network, and religious beliefs were positively related to AtA, while aging denial, isolation, conformist mystical religious posture and present alienation negatively related to AtA.   | 0.75           |
| Carlsson et al (1991) <sup>38</sup>                  | Sweden      | English    | 129 | 85      | Qualitative study with in-depth interviews              | Community dwelling | Purposeful sample recruited in Gothenburg   | Seven patterns of AtA in old age were found in this study: self-realizing, mature aging, adapting, dependent, resignedly accepting, despairing, and withdrawing.  | 0.80           |
| Carlsson et al (1991) <sup>39</sup>                  | Sweden      | English    | 129 | 85      | Qualitative study with in-depth interviews              | Community dwelling | Purposeful sample recruited in Gothenburg   | Older adults with poorer AtA could be more affected by minor physical impairments, while physical impairments were of a subordinate importance to those who were better adjusted to aging.  | 0.80           |
| Fridman et al (2011) <sup>40</sup>                   | Israel      | English    | 65  | 60+     | Case-control study                                      | Community dwelling | Convenient sample recruited from population-wide demographic information provided by the population registry administered by Israeli Ministry of Interior | Holocaust survivors showed that they were unable to integrate their past and present challenges during AtA and showed more post-traumatic symptoms (as expressed in dissociative symptomatology), less satisfaction with their life, more cognitive impairment, and more stress.  | 0.82           |
| Holahan et al (1984) <sup>33</sup>                   | USA         | English    | 64  | 65+     | Qualitative study with structured interviews            | Community dwelling | Purposeful sample   | Negative life events and daily hassles were related to maladjustment to aging for men, while hassles were associated with poor AtA for women. An inverse relationship between self-efficacy and maladjustment was also found.   | 0.80           |
| Holahan and Holahan (1987) <sup>34</sup>             | USA         | English    | 52  | 65+     | Qualitative study with structured interviews            | Community dwelling | Purposeful sample   | Frequency of hassles and negative life events, and perceived self-efficacy were related to AtA.   | 0.80           |
| Krzemien et al (2005) <sup>41</sup>                  | Argentina   | Spanish    | 60  | 60+     | Quasiexperimental study                                 | Community dwelling | Convenient sample recruited from the Universidad de Adultos Mayores (Universidad Nacional de Mar del Plata)   | Older adults used active and adaptive (e.g., behavioral, cognitive, and self-distraction) strategies for promoting AtA.   | 0.71           |
| Rickabaugh and Tomlinson-Keasey (1997) <sup>42</sup> | USA         | English    | 70  | 65+     | Qualitative, descriptive with semistructured interviews | Community dwelling | Convenient sample recruited from two senior center facilities in Southern California  | Older participants evidenced self-enhancing social and temporal comparison processes in their perceived AtA, and the majority of these comparisons were positive (i.e., self-enhancing) in nature. Participants perceived themselves to be adjusting well to the changes in adulthood and demonstrated comparatively superior adjustment to the vicissitudes of aging than their friends, neighbors, and most other older adults. | 0.75           |
| Slangen-De kort et al (2001) <sup>43</sup>           | Netherlands | English    | 199 | 61+     | Quasiexperimental study.                                | Community dwelling | Convenient sample recruited from local networks of the Catholic Association of Senior Citizens in the south of The Netherlands                            | Response efficacy and self-efficacy influenced adaptive strategies within AtA.  | 0.79           |
| Sneed and Whitbourne (2003) <sup>44</sup>            | USA         | English    | 86  | 60+     | Cross-sectional   | Community dwelling | Convenient sample   | Reliance on identity assimilation was found to be higher in older adults, during AtA.   | 0.91           |
| Thomae (1992) <sup>45</sup>                          | Germany     | English    | 222 | 65+     | Longitudinal  | Community dwelling | Analytic sample recruited from the BOLSA  | Older adults' AtA was achieved when a balance between the cognitive and motivational systems of the persons was attained.   | 0.68           |

AtA = adjustment to aging; BOLSA = Bonn Longitudinal Study on Aging.

All three studies that analyzed strategies for AtA related positively to AtA, focused on positive strategies, and discussed active and adaptive strategies in old age. These are in line with the theoretical model of Wrosch and colleagues<sup>22–25</sup>, which demonstrated evidence for the benefits derived from adaptive self-regulation of age-related challenges.

Furthermore, considering a variety of adjustment forms, Carlsson and colleagues<sup>38</sup> defined seven patterns of adjustment (see Table 1). In line with this, Atchley<sup>21</sup>, in his continuity theory, mentioned the ability of older persons to maintain a strong sense of purpose in the face of changes associated with aging.

In Sneed and Whitbourne's study<sup>44</sup>, reliance on identity assimilation (maintaining self-consistency) was found to be higher in older adults, in comparison to identity accommodation (making changes in the self). These results did not corroborate Brandtstädter and Renner's<sup>19</sup> and Brandtstädter and Greve's<sup>20</sup> models, which pointed out an accommodative shift in later adulthood.

Six empirical studies examined the role of psychological variables in AtA, such as self-efficacy, autonomy, self-acceptance, social and temporal comparisons, and mental and emotional engagement<sup>33,34,36,37,42,43</sup>. In fact, older adults' well-being, and mental and emotional engagement with significant others have previously been related to psychological factors<sup>47</sup>. Additionally, interpersonal intimacy and self-concept were seen earlier as a key to AtA, as in McMordie's<sup>17</sup> theoretical model.

Previous literature pointed out positive predisposition and personality as main predictors of aging well in old age<sup>48</sup>. Conversely, in our review, four studies underlined physical impairment, daily hassles, negative life events, and difficulties in integrating the past to be associated with poor AtA<sup>33,34,40,49</sup>. These results come as no surprise, as older adults may become vulnerable to changes that are associated with the aging process<sup>35</sup>.

Future work should avoid some of the limitations of this review. A systematic review is a form of observational research and, thus, is vulnerable to bias. An extensive literature search outside the computerized databases and of other languages besides English, Portuguese, and Spanish was not performed. Therefore, our systematic review may suffer from publication and language bias. Most of the studies were qualitative, which hampered our ability to draw causal inferences. Additionally, longitudinal studies concerning AtA were rare. There is a pressing need to conduct more theory-driven longitudinal studies to confirm the stability of AtA and to allow for causal attributions.

Because we only considered participants aged  $\geq 60$  years, studies with younger control groups were excluded. Furthermore, all the studies in this review were conducted in nonmultiple ethnic groups. Additionally, only three studies were conducted in the context of non-Western culture and in developing regions. Subsequently, further investigation of cultural and ethnic differences in AtA is required. In this context, a recent study by Humboldt et al.<sup>50</sup> highlights an adjustment and age overall model, which yields information on the ways the older adult in various cultural settings adjust to challenges in late adulthood.

Only 13 from a total of 1291 references met the inclusion criteria. Thus, a future systematic review could be enriched with more articles by broadening the AtA topic.

Considering that different research paradigms underline quantitative and qualitative studies<sup>29</sup>, and that a diverse array of theoretical and methodological approaches and measurement instruments were found in the studies included in this review, the comparison between the findings was also affected.

Furthermore, empirical evidence is still limited. More rigorous experimental studies testing the causality and multidimensionality of AtA are needed. With this in mind, it will be valuable for future research to develop these in combination with AtA's outcomes in

health and well-being in late adulthood. Such a comprehensive view can serve as a basis for further studies on promotion of AtA among older populations.

This systematic review of studies on AtA in older adults has acknowledged the insufficiently explored state of the field. However, considering that the majority of these studies were rated to be of high quality, this review provides extensive and valuable coverage of older adults' AtA.

Outcomes highlight the importance of developing adaptive and active strategies for AtA in late adulthood. It must be noted that despite the limitations of our study, strategies for AtA were the most investigated variables in the review, namely, active and adaptive strategies. Additionally, aging well involves the flexible use of adaptive strategies<sup>8,22–25</sup>.

Furthermore, available evidence indicates that psychological variables such as self-efficacy, engagement with significant others, and social and temporal processes of comparison are the most frequently assessed variables in these studies, as they have a relevant role in AtA in older adults. This review also presented evidence of variables that are negatively related to AtA, such as physical impairment, daily hassles, negative life events, and difficulties in integrating the past.

The potential value of considering variables with a relevant role in AtA among older people is stressed by the fact that when diverse dimensions are analyzed with this population, results may indicate the need of a multidisciplinary approach to AtA in older adults and the lack of preeminence of any one specific variable. With this in mind, it will be valuable for further research to focus on adaptive and active strategies, psychological variables, and engagement with significant others, which deepen the distinctiveness of the experiences of older adults regarding AtA.

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