

Research Article

Development and Initial Validation of the Subjective Academic Wellbeing Measure: A New Tool of Youth Wellbeing in School

Gökmen Arslan¹, Murat Yıldırım², and Silvia Majercakova Albertova³

Abstract

The purpose of the current study was to investigate the preliminary development and validation of the Subjective Academic Wellbeing Measure (SAWM), which is a six-item self-report rating measure intended for use as a screening tool to assess the positive academic functioning of young people within the elementary and high school context. Exploratory factor analysis was performed with Sample 1 ($N=161$), indicating that the SAWM was characterized by a unidimensional measurement model and had strong factor loadings. Results from confirmatory factor analysis, which was carried out with Sample 2 ($N=199$), confirmed the measurement model by yielding good data-model fit statistics that were characterized by strong latent construct and internal reliability estimates. Further analyses showed that the scale had good convergent validity considering scores from several self-reported scales of student mental health problems and positive school functioning. Further analyses also showed that configural, metric, and scalar measurement invariance were observed across gender groups. These results provide initial evidence suggesting that the SAWM is a reliable and valid measure that can be used to assess the positive academic functioning of students within the school context. Implications are discussed, and some suggestions are provided for future research and practice.

Keywords: Subjective academic wellbeing, wellbeing, positive psychology, measure development

Wellbeing is a multifaceted construct that represents a significant source for young people (Renshaw et al., 2015; Renshaw & Arslan, 2016; Yıldırım et al., 2019) and is associated with increased variety of youth valued outcomes (e.g., academic success, better psychological adjustment, and greater academic satisfaction) (Arslan & Coşkun, 2020; Kansky & Diener, 2017; Yıldırım & Solmaz, 2020). Schools are a primary delivery setting to provide mental health services for students, and public health approaches are widely supported for addressing young people's unmet mental health needs in schools (Arslan, 2019b; Dowdy et al., 2010). Universal mental health screening is increasingly emphasized as an evidence-based approach for informing school-based prevention and intervention

efforts (Arslan, 2020; Moore et al., 2020; Renshaw et al., 2015). School-based universal screening is also widely accepted as the first step in designing and providing mental health services for young people (Arslan, 2020; Renshaw & Arslan, 2016). Although there is evidence, indicating that this approach may be useful, there are a few barriers to preventing mental health screening initiatives that are sponsored by schools (Arslan & Renshaw, 2019). For example, lack of contextually appropriate, usable, and technically sound measures for performing school-based screening is emphasized as one of the common barriers (Arslan, 2019b; Arslan & Duru, 2017; Glover & Albers, 2007; Renshaw, 2018). Therefore, there is a warrant for research that aims to develop and validate a self-report

¹Department of Psychological Counseling and Guidance, Burdur Mehmet Akif Ersoy University, Burdur, Turkey

²Department of Psychology, Ağrı İbrahim Çeçen University, Ağrı, Turkey

³Department of School and Organizational Psychology, Pan European University, Bratislava, Slovakia

wellbeing measure that can be used to develop prevention and intervention strategies for young people in school settings.

During the recent decade, researchers and practitioners have given a growing attention to the effects of subjective wellbeing on youth valued outcomes under the banner of positive psychology (Arslan & Coşkun, 2020; Proctor et al., 2010; Suldo & Huebner, 2006; Telef, 2020, Yildirim, & Aziz, 2017). Along with the broader field of positive psychology, positive education especially focuses on fostering young people's skills and strengths (e.g., optimism, gratitude, and strengths use) that foster their wellbeing and mental health (Seligman et al., 2009). Therefore, measuring student subjective wellbeing in the school context does not only help to develop intervention strategies but also provides additional insight into whether the practices of positive education is having a positive influence on youth mental health and functioning. Studies have often focused on the traditional indicators of subjective wellbeing, which has widely been operationalized via positive affectivity and life satisfaction (Diener, 2000; Moore & Diener, 2019; Yıldırım & Tanrıverdi, 2020). Recently, these conceptualizations have been expanded to focusing on psychological, social, and emotional aspects of wellbeing, such as meaning, relationship, and engagement (Keyes et al., 2008; Ryff & Keyes, 1995; Seligman, 2011). Although schools are an important and effective environment in which wellbeing can be developed and maintained, few have been interested in it. Recent efforts has arisen to develop and validate instruments of young people's wellbeing, moving beyond the traditional measurement of wellbeing indicators –e.g., positive affect, satisfaction with life (e.g., Moore & Diener, 2019) for assessment of wellbeing constructs, such as covitality (e.g., Furlong et al., 2014; Renshaw et al., 2015). Additionally, some of these studies have sought to develop and validate domain-specific scales that target the school-specific subjective wellbeing of young people. For example, the Student Subjective Wellbeing Questionnaire (SSWQ; Renshaw et al., 2015) was developed to measure high school students' perceptions of their four school-specific constructs: academic efficacy, joy of learning, educational purpose, and school connectedness. The SSWQ is a 16-item self-report scale for measuring both school-specific private wellbeing indicators (i.e., joy of learning, school connectedness, and educational purpose) and a public wellbeing indicator (i.e.,

academic efficacy; Renshaw et al., 2015; Renshaw & Arslan, 2016; Renshaw & Chenier, 2018). Similarly, the Positive Experiences at School Scale (PEASS; Furlong et al., 2013) is another example for measuring domain-specific wellbeing that is a 16-item self-report scale designed to measure youths' school-specific positive experiences, including optimism, gratitude, zest and academic persistence.

Previous studies indicated that school-specific wellbeing had strong predictive effects on youths' school functioning and other quality-of-life outcomes, such as academic achievement, emotional problems, and academic self-concept (Arslan, 2019a; Arslan & Renshaw, 2018; Kaplan, 2017; Renshaw & Arslan, 2016; Renshaw & Bolognino, 2016; Renshaw & Chenier, 2019; Yıldırım & Güler, 2020). Although early evidence suggested that school-specific positive traits are better predictors of various important outcomes (e.g., Arslan, 2019a; Renshaw & Bolognino, 2016), there is no consensus on the nature and definition of school-specific wellbeing. Therefore, it is reasonable to examine wellbeing in relation to the academic context (i.e., subjective academic wellbeing). Prior studies have conceptualized academic well-being using several positive and negative school functioning, including academic self-concept, engagement, school burnout, perceived learning difficulties, satisfaction with educational choice, school value (Fiorilli et al., 2017; Korhonen et al., 2014; Tuominen-Soini et al., 2012). Widlund et al. (2018) for example conceptualized academic wellbeing as a construct covering both positive (e.g., schoolwork engagement) and negative (e.g., school burnout) aspects of academic wellbeing. In line with the literature and positive psychology framework, subjective academic wellbeing is here defined as a student's perceptions of positive and successful academic functioning, which can serve as an important indicator of domain-specific wellbeing.

Students with high subjective academic well-being can be characterized as having good grades on exam, interested in learning new things in school, enjoy doing schoolwork, effectively managing their time to complete important school-related task, and coping with academic work (Renshaw & Arslan, 2016; Tuominen-Soini et al., 2012; Widlund et al., 2018). Youth are able to report the extent to which they function in school or have positive outcomes. However, this is not a simple sum of their academic functioning. For example, although students may report positive experiences, optimism, pleasure, zest, and academic

persistence in school, this does not mean that their level of subjective academic well-being has been assessed comprehensively. Thus, there is need to assess students' subjective academic well-being in general at school context to understand the extent to which they function academically at school. As a whole, the purpose of the present study is to advance this particular line of youth wellbeing research by developing and validating a new school-specific wellbeing scale– the Subjective Academic Wellbeing Measure (SAWM)–, which might be useful as a school-specific wellbeing-oriented screener to provide effective prevention and intervention services.

Although two school-specific measures are currently available for measuring students' healthy and successful school functioning (PEASS and SSWQ), a new technically adequate, contextually appropriate, and practically usable measure of subjective academic wellbeing is needed for assessing youths' positive academic functioning in the context of the universal screening approach. The SAWM is of practical use to counselor working within a positive school psychological framework, who are concerned not only with the specific aspect of youths' school functioning and other quality-of-life outcomes but also with the promotion of overall subjective academic well-being. Using the SAWM, changes in overall subjective academic well-being can be documented along the self-rated scale. There are several arguments for developing a new measure of well-being in school context. First, a short measure is essential to collect data in a limited amount of time with particular populations. Second, a short scale can also be fruitful when measurement of a number of variables is being endeavored and thus significant questionnaire space cannot be specific to any one variable. A brief SAWM also promises to be helpful for school counselors who are interested in assessing students' academic well-being, but who wish to retain the completion of self-report scales during the consultancy session to a minimum level. Finally, such a measure would present a broader category of school-specific wellbeing-oriented. In short, the purpose of this study was to report preliminary findings on a new brief measure of well-being for assessing the youth's subjective academic well-being in school context. To that end, we hypothesised that the SAWS would have a single factor solution with high internal reliability estimates. We also expected that academic subjective well-being would be positively associated with prosocial behaviours and academic achievement and negatively associated with internalizing problems.

Method

Participants

The study sample includes two independent samples, comprising of 360 young people enrolled in Grades 5–12 from Turkey. Sample 1 was used for exploratory factor analysis (EFA), which consisted of 161 students (70% female), ranging in age from 11 to 17 years ($M = 13.9$, $SD = 1.70$). Sample 2 was used for confirmatory factor analysis (CFA), which comprised of 199 young adults (52% female), ranging in age from 10 to 18 years ($M = 14.60$, $SD = 2.23$). The ratio of the number of participants to variables for each sub-sample exceeded the suggested minimum ratio required for factor analysis of 5 to 1 (with a minimum number of 100 subjects (Gorsuch & Hillsdale, 1983)). A web-based online survey was generated using demographic items and the measurement tools of the study in Turkish. The students were informed that their participation in the study was voluntary and the survey was confidential. Before collecting the data, an electronic assent form was signed by young people, and they were contacted via social media. The study was approved by institutional review board.

Measures

Subjective Academic Wellbeing Measure (SAWM). A new item pool was drafted to assess aspects of positive academic functioning. Based on outlining a rationale for developing a new scale for assessing subjective academic wellbeing, the pilot items were generated. The SAWM' items target to measure different academic wellbeing domains (e.g., academic self-concept, academic performance, and homework completion). First, the characteristics of these domains were examined and next, empirical and theoretical literature and other school-specific wellbeing measures (e.g., Furlong et al., 2013; Renshaw et al., 2015) were reviewed to create the item pool of seven items. Creation of the SAWM item pool followed procedures that were recommended from standard texts on scale development (Tay & Jebb, 2017; Worthington & Whittaker, 2006). Subsequently, the draft was administered to a group of three content experts in youth mental health and wellbeing screening, who were tenured professors in the fields of counseling psychology in Turkey, reviewed the SAWM item pool. The experts independently reviewed the structure of the items in terms of conciseness, clarity, and developmental appropriateness. Based on their comments, a few minor changes were conducted on two items to increase clarity, and the item pool was edited into a revised form. All items in the revised form were

finally rated using a 5-point rating scale (almost never = 1 to almost always = 5). All items are summed to generate the composite score of the measure, and higher scores represent greater levels of youth subjective academic wellbeing.

Prosocial Behavior Scale (PBS). The PBS is a 5-item self-report behavior rating scale behavior (e.g. “I am considerate of others”) that was the prosocial behaviors of children and adolescents (Goodman, 2001). All items of the scale are scored using a three-point response scale (0 = not true, 1 = somewhat true, and 2 = certainly true). The scale had adequate internal reliability estimate with Turkish youths (Güvenir et al., 2008) and with Sample 2 in this study ($\alpha = .73$).

Self-Reported Academic Achievement (SRAA). Self-report academic achievement was assessed using a single item scale (“During the past year, how would you describe the grades you received in school?”). The item is scored using a five-point grade-range scale (1 = very poor, 2 = poor, 3 = average, 4 = good, 5 = very good), and higher scores indicated higher student academic achievement.

Youth Internalizing Behavior Screener (YIBS). The YIBS was used to measure the internalizing problems of young people. This 10-item scale consists of two subscales - depression and anxiety (e.g., “I feel depressed and pessimistic.”, “I have difficulty in relaxing and calming down myself.”), with items rated on a four-point scale ranging from 1 (almost never to 4 almost always). The scale provided adequate internal reliability estimates with Turkish young people (Arslan, 2020) and with Sample 2 of this study ($\alpha = .90$).

Data Analyses

Exploratory factor analysis was first carried out to identify the factor structure of the SAWS with Sample 1 of the study. Then, we performed confirmatory factor

analysis to affirm the identified measurement model with Sample 2. Results from the factor analysis were evaluated using several data-model fit statistics and their cut-off values: Tucker-Lewis index (TLI) and comparative fit index (CFI) $\geq .90$ = adequate and $\geq .95$ = close model fit; standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA) $\leq .08$ = adequate and $\leq .05$ = close model fit (Hooper et al., 2008; Hu & Bentler, 1999). Moreover, latent construct reliability (H) scores $\geq .70$ were considered adequate (Mueller & Hancock, 2008). Measurement invariance of the measure was then conducted to investigate configural, metric and scalar invariance for gender using multiple-groups factor analysis. Findings of these analyses were interpreted based on the ΔCFI scores, with scores $< .01$ accepted as evidence of invariance across group (Cheung & Rensvold, 2002).

We next examined the adequacy of estimates for observed scale characteristics using their common decision points (kurtosis and skewness values $< |2|$ = relatively normal distribution; internal reliability $[\alpha] \geq .70$ = adequate; factor loadings $[\lambda] > .40$ = adequate; Stevens, 2009). Lastly, a series of bivariate correlations were used to employ concurrent validity of the SAWS with scores from the YIBS scales, PBS, and the SRAA. Common decision rules were interpreted for correlation results (.10-.29 = small, .30-.49 = moderate, $\geq .50$ = large; Cohen, 1988). Moreover, the latent variable path analysis was used to investigate the predictive effect of the unidimensional measurement model on student academic achievement, prosocial behavior, and internalizing problems. We interpreted the squared-multiple correlations (R^2) for the results of latent analysis (Cohen, 1988). All statistical analyses were performed using jamovi 1.6.3 (The jamovi project, 2020) and AMOS version 24.

Table 1. Factor loadings of the SAWS: Sample 1 (EFA) and Sample 2 (CFA)

Item	EFA		CFA	
	λ	u^2	λ	ℓ^2
1. I get good grades on exams.	.57	.67	.62	.39
2. I am interested in learning new things in school.	.67	.56	.75	.57
3. I finish my assignments on time.	.76	.43	.76	.58
4. I believe that I am a good student.	.86	.27	.78	.60
5. I enjoy doing my schoolwork.	.68	.57	.69	.47
6. I am confident in my ability to deal with my academic work	.78	.41	.66	.44

Note. λ = item factor loadings; ℓ^2 = indicator reliability for first-order factor items

Table 2. Descriptive statistics and internal reliability estimates

Sample	<i>N</i>	Min.	Max.	<i>M</i>	<i>SD</i>	Skew.	Kurt.	α
Sample 1	161	11	30	24.0	4.64	-.90	.26	.85
Sample 2	199	8	30	23.1	4.74	-.81	.38	.86

Note. Min. = Minimum score; Max. = Maximum score; Skew. = Skewness; Kurt. = kurtosis

Results

Exploratory factor analysis, which was conducted using Maximum likelihood factoring extraction method with Promax (oblique) rotation, results revealed that the SAWS yielded a single factor solution with eigenvalues > 1 (3.39) that accounted for approximately 48.5% of the variance, characterizing by a lack of singularity (Bartlett's $\chi^2 = 495$, $df = 20$, $p < .001$) and adequate sample size (Kaiser-Meyer-Olkin [KMO] = .84). However, the parallel analysis showed a two-factor solution and that the second factor comprised of a single item (Item 5 $\lambda = .51$). The visual inspection of the scree plot also suggested a one-factor solution would provide a better fit to the data. After excluding this single item, the factor analysis was rerun constraining the one-factor solution. Further results indicated the one-factor solution with eigenvalues > 1 , which included six items accounted for 51.7% of the variance and were robust factor loadings (λ range = .57-.86) as shown in Table 1.

Confirmatory factor analysis was next employed to affirm the unidimensional measurement model that was identified using exploratory factor analysis with Sample 2. Findings from this analysis provided good data-model fit statistics ($\chi^2 = 17.85$, $df = 9$, $p = .04$, CFI = .98, TLI = .97, RMSEA [95% CI] = .070 [.02, .11], SRMR = .032), and the unidimensional measurement model was characterized by robust factor loadings (λ range = .62-.78), as seen in Table 1, and a strong latent construct reliability estimate ($H = .87$). Results from observed scale characteristics also showed that the SAWS had relatively normal distribution (skewness and kurtosis $< |1|$) as well as strong internal reliability estimates, as shown in Table 2.

We also carried out measurement invariance of the measure (i.e., configural, metric and scalar invariance) for gender using multiple-groups factor analysis with

AMOS version 24. Findings from multi-group analyses showed that measurement model, which included configural, metric and scalar invariance, indicated good data model fit statistics for gender, see Table 3. Given the change in the values of the CFI with regard to gender ($\Delta CFI < .01$), measurement invariance was observed at the configural, metric and scalar invariance model. These results suggest that configural, metric and scalar measurement invariance were observed across gender groups. Given the results of the multi-groups analysis, the latent means analysis was performed to examine gender difference for the measurement model. Findings from these analyses showed that female reported greater subjective academic wellbeing compared to male (Estimate = .25, $CR = 2.74$, $p < .05$; Cohen's $d = .38$).

Lastly, correlation analysis was performed to examine concurrent validity of the measure with the criterion variables. Correlation results showed that student academic wellbeing has significant and positive associations with student self-report academic achievement ($r = .46$, $p < .001$) and prosocial behavior ($r = .34$, $p < .001$). Subjective academic wellbeing was also significantly and negatively correlated with student depressive symptoms ($r = -.28$, $p < .001$), anxiety ($r = -.33$, $p < .001$), and overall internalizing problems ($r = -.31$, $p < .001$). Additionally, latent analysis results provided further evidence ($\chi^2 = 66.28$, $df = 27$, $p < .001$, CFI = .93, TLI = .91, RMSEA [95% CI] = .086 [.06, .12], SRMR = .053), indicating that academic subjective wellbeing had a significant and large predictive effect on prosocial behavior ($\beta = .37$, $p < .001$, $R^2 = .14$), a moderate predictive effect on internalizing problems ($\beta = -.32$, $p < .001$, $R^2 = .10$), and a large predictive effect on self-report academic achievement ($\beta = .50$, $p < .001$, $R^2 = .25$), as seen in Figure 1.

Table 3. Measurement invariance results

Invariance Level	χ^2	<i>df</i>	RMSEA [90%CI]	CFI	ΔCFI
Configural invariance	24.90	18	.044 [.00, .083]	.984	—
Metric invariance	27.71	23	.033 [.023, .042]	.989	.005
Scalar invariance	32.69	24	.031 [.021, .040]	.980	.009

Note. All χ^2 values were non-significant

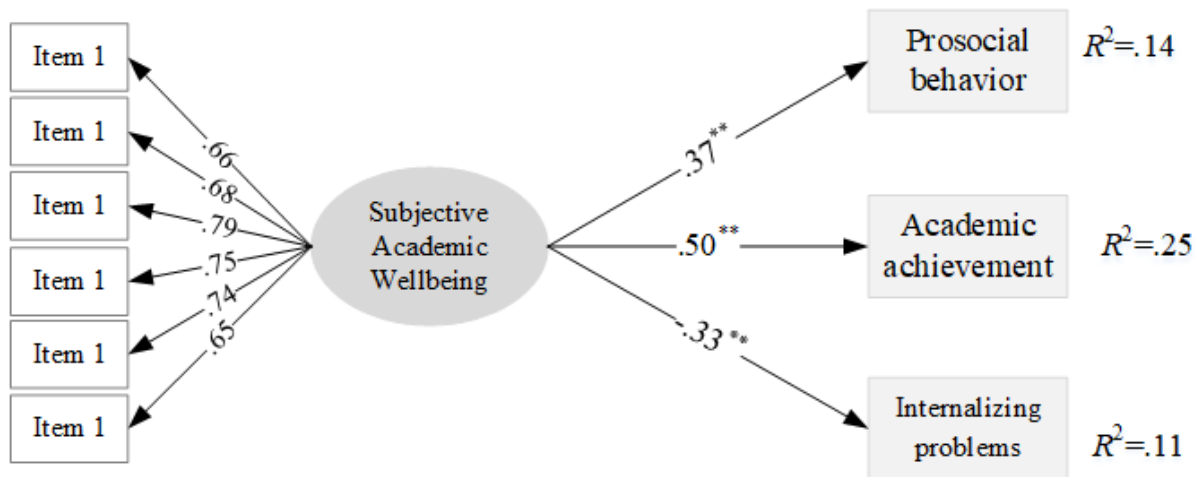


Figure 1. Latent path analysis indicating the predictive effects of subjective academic wellbeing on concurrent validity measures

Discussion

Although universal mental health screening is widely accepted as the first step in designing mental health services for young people in school settings (Arslan, 2020; Dowdy et al., 2010; Furlong et al., 2013; S. A. Moore et al., 2020; Renshaw & Arslan, 2016), very few contextually appropriate and usable instruments are available for use to measure domain-specific wellbeing indicators among young people, specifically in Turkey. Therefore, the purpose of this study is to report the preliminary development and validation of a new school-specific wellbeing scale—the Subjective Academic Wellbeing Measure (SAWM)—, which might be useful as a wellbeing-oriented screener to provide more effective mental health services for Turkish young people in school settings.

Exploratory factor analysis results revealed the SAWM yielded a one-factor solution comprising of six items that accounted for approximately 52% of the variance. Thereafter, confirmatory factor analysis was employed to affirm the latent structure of the scale, and the findings indicated that the one-factor measurement model provided good data-model fit statistics characterized by strong factor loadings, as well as the strong internal reliability and latent construct estimates ($\alpha = .85-.86$; $H = .87$). Findings from multi-group analyses also showed that measurement model yielded good data model fit statistics for gender, suggesting that configural, metric and scalar measurement invariance were observed across gender groups. Findings from the latent means analysis also demonstrated that female students reported greater subjective academic wellbeing than male students. Further, validity analyses provided evidence, suggesting the moderate relationships between the SAWM and academic

achievement, prosocial behavior, and internalizing problems. Latent model outcomes indicated that the SAWM had a significant predictive effect on these wellbeing and mental health indicators. Taken together, the results of the present study indicate that the SAWM is a psychometrically reliable and valid measure for assessing school-specific positive youth academic functioning among Turkish young people in school settings.

Considered in light of the literature, there are only a limited number of measures designed to assess subjective wellbeing and/or wellbeing indicators in the school context. Findings from the study suggest the use of the SAWM as a brief and effective screener for measuring youth positive academic functioning in school settings. Considering the criteria for evaluating universal screeners (Glover & Albers, 2007), the results of this study additionally indicate that the SAWM is a psychometrically adequate, usable, and developmentally and contextually appropriate screener for assessing and youth subjective academic wellbeing. The prime benefit of the SAWM is to provide school-based mental health providers and practitioners with a reliable and valid resource at no cost. The SAWM could for example be used as an effective instrument for acquiring information about students requiring help, who are also at risk of experiencing academic challenges in school settings. In addition, school-based mental health providers could utilize the measure as a screening tool for developing prevention and intervention strategies for youths with academic problems. Applying these strategies might encourage youths' positive school outcomes (e.g., school achievement, school belonging) and facilitate youth educational development.

Despite these interesting results, findings from the study should be considered in light of a few methodological limitations for future research. Samples in this study were obtained via convenience sampling, and this study was not nationally representative. Therefore, replication and generalization research should be conducted using more representative samples in the future. Next, correlation and latent path analysis were performed to examine concurrent validity of the SAWM with several criterion variables (i.e. the PSB). Therefore, future research could provide additional insights into the validity of the measure using alternative criterion variables and methods. Finally, the data collection method in the present study relied on self-report, and future research is therefore warranted to use different data collection methods to reduce subject-related biases that could have impacted the emerging results. As a whole, the findings of the present study provide evidence that mental health providers could use the SAWM as a brief reliable and valid tool for assessing youth subjective academic wellbeing in school settings.

Compliance with Ethical Standards

Ethical Standards

All study procedures involving human participants followed institutional and/or national research committee ethical standards and the 1964 Helsinki declaration and its later amendments or comparable ethical standards. All procedures were also approved by Burdur Mehmet Akif Ersoy University's Institutional Review Board.


Declaration of Conflicting Interests


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ORCID

Gökmen Arslan  <https://orcid.org/0000-0001-9427-1554>

Murat Yıldırım  <https://orcid.org/0000-0003-1089-1380>

Silvia Majercakova Albertova  <https://orcid.org/0000-0003-3634-8431>

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