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ASSESSMENT OF ULTRA-PROCESSED FOOD INTAKE: METHODOLOGICAL REVIEW OF EXISTING INSTRUMENTS AND THE NEED FOR A REGIONALLY ADAPTED NOVA-UPF SCREENER

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Abstract. *The assessment of ultra-processed food intake has become an important methodological issue in nutritional epidemiology, since conventional dietary instruments often fail to distinguish homemade, artisanal, industrially processed and ultra-processed forms of similar foods. The aim of this paper was to review available instruments for assessing ultra-processed and highly processed food consumption, with emphasis on their potential applicability in Republic of Serbia, Bosnia and Herzegovina, Montenegro and Croatia. A targeted narrative methodological review was conducted using PubMed/MEDLINE, Google Scholar, ScienceDirect, Hrčak, SCIndeks, COBISS catalogues, EFSA sources and the Global Diet Quality Project. The search covered publications from 2009 to 2026 in English and in regional languages. Included publications described the development, validation, adaptation or application of food frequency questionnaires, NOVA-UPF screeners, sQ-HPF tools, or regional dietary assessment data. International evidence shows that NOVA-based FFQs can estimate habitual intake and rank individuals according to relative ultra-processed food consumption, but they are less suitable for precise quantification of absolute intake. Short NOVA-UPF and HPF screeners are more practical for population screening and online surveys, but require local adaptation, expert review, pilot testing, test-retest reliability assessment and validation against reference dietary methods. Regional data indicate the existence of dietary assessment infrastructure, including EU Menu-based surveys, FFQ development and individual applications of NOVA or SIGA classification. However, no publicly available validated short NOVA-UPF or sQ-HPF screener for the general adult population was identified in the reviewed countries. These findings support the development of a regionally adapted NOVA-UPF/HPF module based on locally relevant product categories and validated for screening and ranking, rather than precise estimation of grams or energy share.*

Keywords*: ultra-processed food, NOVA classification, dietary assessment, screener, regional adaptation*

Introduction

Traditional dietary assessment relies mainly on energy, macro- and micronutrient intake, and food-group consumption. However, these indicators do not capture the degree and purpose of industrial food processing. The NOVA classification addresses this gap by grouping foods into unprocessed or minimally processed foods, processed culinary ingredients, processed foods, and ultra-processed foods [1,2].

Ultra-processed foods are industrial formulations made largely from substances extracted from foods, modified ingredients and additives, with little or no intact whole food. Typical examples include sugar-sweetened beverages, packaged snacks, confectionery, ready-to-eat meals, instant products and processed meat products [2]. Their public-health relevance is supported by recent umbrella reviews: Lane et al. analysed 45 pooled analyses and reported associations between higher UPF exposure and several adverse outcomes, particularly cardiometabolic disorders, common mental disorders and mortality [3]. Dai et al. included 39 meta-analyses and 122 primary studies covering 49 health outcomes, further linking higher UPF intake with chronic disease and mental-health outcomes [4]. A regional review has also discussed endocrine disruption, chronic inflammation, microbiome alterations and epigenetic mechanisms as potential pathways linking UPF intake with adverse health effects [5].

Despite growing evidence, UPF intake remains difficult to measure. Standard food-frequency questionnaires often do not distinguish homemade, artisanal, industrially processed and ultra-processed versions of similar products. Bread, pastries, cakes, sandwiches or ready meals may therefore be classified imprecisely if the instrument does not explicitly assess processing level. This limitation has stimulated the development of NOVA-oriented dietary tools. For example, the Italian 94-item NFFQ was designed to estimate intake across NOVA groups in g/day and as proportional contribution, showing good test-retest reliability and moderate to good validity against weighed dietary records, but its length limits use in rapid population screening [6].

Shorter tools, including NOVA-UPF screeners and the sQ-HPF, have therefore been developed to estimate habitual frequency of UPF or highly processed food consumption with lower respondent burden. Their use in online surveys and public-health screening is promising, but direct translation is insufficient. Because UPF categories depend on local markets, food culture, product names and consumption patterns, each tool requires linguistic, cultural and methodological adaptation, followed by validation in the target population.

The aim of this paper is to review international instruments for assessing ultra-processed and highly processed food consumption, with emphasis on FFQ-based approaches, NOVA-UPF screeners and the sQ-HPF, and to evaluate their potential applicability in the regional context of Republic of Serbia, Bosnia and Herzegovina, Montenegro and Croatia.

Methodology

This paper was designed as a narrative methodological review of instruments used to assess ultra-processed and highly processed food consumption, with emphasis on their potential applicability in Republic of Serbia, Bosnia and Herzegovina, Montenegro and Croatia. A targeted search of publicly available sources was conducted, including PubMed/MEDLINE, Google Scholar, ScienceDirect, Hrčak, SCIndeks, COBISS catalogues, EFSA sources and the Global Diet Quality Project.

The search covered publications from 2009 to 2026, in English and in the languages of the region. Search terms included: “ultra-processed food”, “ultraprocessed food”, “UPF”, “highly processed food”, “NOVA classification”, “questionnaire”, “screener”, “screening tool”, “food frequency questionnaire”, “FFQ”, “validation”, “reliability”, “Republic of Serbia”, “Bosnia and Herzegovina”, “Montenegro”, “Croatia”, as well as regional terms referring to ultra-processed food, highly processed food, questionnaires, screening and dietary assessment.

Included publications described the development, validation, adaptation or application of instruments for assessing UPF intake, or provided relevant regional data on dietary intake, food environments or the use of NOVA/SIGA classification. Studies addressing only health outcomes, without a clear dietary assessment method, were excluded. Findings were synthesised narratively, focusing on instrument type, target population, validation method, scoring approach and suitability for regional public-health screening.

FFQ instruments based on the NOVA classification

Food Frequency Questionnaires are widely used in nutritional epidemiology because they estimate habitual dietary intake over longer periods. However, conventional FFQs are often insufficient for assessing ultra-processed food intake, since they do not always distinguish homemade, artisanal, industrially processed and ultra-processed versions of similar products [6,7].

Several NOVA-oriented FFQ instruments have therefore been developed. The Italian NFFQ included 94 items and was designed to estimate adult dietary intake across NOVA groups, expressed both in g/day and as proportional contribution of each NOVA category. It showed good test-retest reliability and moderate to good validity against weighed dietary records [6]. The Brazilian NovaFFQ further illustrates the importance of local dietary context: its food list was derived from national dietary intake data from 2017–2018 and validated against the Nova24h recall, confirming that instruments for UPF assessment must reflect dominant foods and consumption patterns in the target population [8]. Similarly, an Italian protocol for a new UPF-oriented FFQ emphasised the need to distinguish industrial, artisanal and homemade products, with planned pilot testing, face validity assessment, test-retest reliability and validation against a 7-day weighed dietary record [9].

An alternative approach is the retrospective NOVA classification of data already collected through existing FFQs. In the NIH-AARP Diet and Health Study, a 124-item FFQ was evaluated using two classification strategies: expert consensus and linkage with food-code databases. The results showed that UPF estimates depend strongly on the granularity of FFQ items and the classification procedure; energy-adjusted gram weight performed better than energy-based estimates alone [7]. Work comparing EPIC-FFQ and NOVA-FFQ approaches points to a similar conclusion: standard FFQs may support large-scale analyses of diet quality and processing level, but cannot fully replace tools explicitly designed for NOVA-based assessment [10].

Validation studies in specific populations confirm that FFQ performance varies by age, dietary pattern and outcome metric. The NFFQ-Elderly showed satisfactory reproducibility for minimally processed and ultra-processed foods in adults aged ≥65 years, while relative validity was stronger when intake was expressed as a percentage of total energy or food weight [11]. In children, the EAT5 FFQ showed acceptable relative validity for ranking intake of minimally processed and ultra-processed foods, but overestimated some categories compared with a 3-day weighed diet record [12]. A Mexican validation study reached a comparable conclusion: a semi-quantitative FFQ had acceptable relative validity for ranking the percentage of energy from unprocessed/minimally processed and ultra-processed foods, while estimates for other NOVA groups were weaker [13].

Overall, NOVA-based FFQs are useful for estimating habitual intake and ranking individuals by relative UPF consumption, but they are less reliable for precise quantification of absolute intake. The Korean KNHANES analysis, comparing a 109-item FFQ with 24h recall data in adults, showed that FFQ estimates are better suited for relative classification than for exact measurement of UPF intake [14]. A recent systematic review of UPF assessment tools supports this interpretation, indicating that FFQs and short screeners may be useful for ranking individuals, whereas detailed quantification requires more intensive dietary assessment methods [15]. Therefore, NOVA-based FFQs remain valuable for detailed epidemiological and validation studies, but their length, classification complexity and need for local adaptation limit their use in rapid population screening. This limitation explains the growing interest in shorter NOVA-UPF and HPF screeners [8,16,17].

Short NOVA-UPF and HPF Screeners for Population Screening

Short screeners for ultra-processed and highly processed food intake have been developed to reduce the burden of lengthy FFQs, repeated 24-hour recalls and multi-day dietary records. Their primary purpose is not precise quantification of total energy intake, but rapid classification of individuals according to the frequency of consuming key UPF or HPF categories. This makes them suitable for online surveys, population studies and public-health screening, provided that they undergo linguistic, cultural and methodological adaptation in the target population [17-20].

The original Brazilian NOVA score provided the basis for several later national adaptations. It used a short list of UPF categories and compared the resulting score with 24-hour recall data, showing that a low-burden instrument can estimate UPF consumption patterns when the aim is screening or ranking rather than detailed quantification [18]. Subsequent adaptations confirmed the same principle. The Portuguese Nova-UPF screener was developed using national dietary survey data, Delphi methodology and 24-hour recall as the reference method; the final version included 25 subgroups and showed strong agreement with the dietary energy share from UPF, with PABAK = 0.86 [19]. The Senegalese adaptation also used Delphi methodology and local food-market data, with renamed, restructured and newly added categories; validation against 24-hour recall showed PABAK = 0.84 [20]. The Ecuadorian NOVA 27 screener identified 27 locally relevant UPF subgroups covering around 90% of UPF-derived energy intake and showed high agreement across most sociodemographic groups [21]. The Indian Nova-UPF screener further illustrates the value of mapping the local food supply through literature review, online retail scanning, label inspection and expert consultation; its 24-category tool showed near-perfect agreement with 24-hour recall estimates of UPF energy share, with PABAK = 0.85 [22].

A related approach is the Short Screening Questionnaire of Highly Processed Food Consumption, the sQ-HPF. Unlike tools based only on NOVA, the sQ-HPF integrates criteria from several processing-based food classification systems, including NOVA, IARC, IFIC and UNC. It was developed from PREDIMED-Plus data, where 14 food groups associated with high HPF intake were selected from a longer FFQ using logistic regression; consumption thresholds were defined by ROC analysis, and internal structure was assessed using exploratory factor analysis and Cronbach analysis [17]. The Turkish validation showed that direct translation is insufficient: after cultural adaptation and comparison with 3-day dietary records, Cronbach's alpha was 0.65, test-retest reliability was ICC = 0.76, and three original items were removed because of low factor loadings [23].

The practical value of short screeners lies in ranking respondents, not replacing detailed dietary assessment. A Korean simplified NOVA-UPF score selected 10 product groups contributing at least 80% of UPF-derived energy intake, scored each frequency item from 0 to 5, and generated a total score from 0 to 50; the authors described it as a preliminary tool requiring further validation [16]. A recent systematic review similarly concluded that short screeners may be appropriate for public-health screening and ranking, whereas detailed quantification still requires more intensive dietary assessment methods [15]. Louie et al. further emphasised that future UPF tools should collect information on preparation method, ingredients, brand and place of purchase, because such details cannot always be reconstructed reliably from standard dietary questionnaires [24].

Overall, short NOVA-UPF and HPF screeners offer a pragmatic alternative to longer dietary assessment tools when the research aim is population screening or intake ranking. Their methodological quality depends on the selection of relevant product

categories, expert review, pilot testing, validation against an appropriate reference method and the ability to classify individuals into meaningful intake groups. These tools should therefore be interpreted as screening instruments, not as substitutes for 24-hour recalls, dietary records or weighed dietary assessment [15, 18-22].

Limitations of Existing Instruments for UPF Intake Assessment

Existing instruments for assessing ultra-processed food intake differ in purpose, length, precision and validation strategy. FFQs can estimate habitual intake over longer periods, but their use within the NOVA framework has important limitations. Standard FFQs often fail to distinguish homemade, artisanal and industrially manufactured versions of similar foods, which may lead to misclassification according to processing level [7,9].

The Korean KNHANES analysis compared a 109-item FFQ with 24-hour recall data in 3189 adults aged 19–64 years. The study showed that FFQs are not ideal for precise estimation of absolute UPF intake, although they may be useful for ranking individuals into intake categories. Agreement between FFQ and 24-hour recall was strongest for UPF compared with other NOVA groups, supporting the use of FFQs primarily as tools for relative classification rather than exact quantification [14].

Similar limitations appear in other validation studies. In the NIH-AARP Diet and Health Study, UPF estimates depended on the classification method, with food-code database linkage providing a more standardised approach than broader expert classification [7]. In children, the EAT5 FFQ showed acceptable relative validity for ranking intake of minimally processed and ultra-processed foods, but overestimated some categories compared with a 3-day weighed diet record [12].

A further limitation concerns foods whose NOVA category depends on preparation method, formulation and place of production. Bread, pastries, sandwiches, ready meals, desserts and meat products may differ substantially between homemade, artisanal and industrial forms. For this reason, newer UPF-oriented FFQ protocols emphasise the need to distinguish industrial, artisanal and homemade products, and to validate instruments against more detailed dietary assessment methods, such as weighed dietary records [9].

Overall, no UPF assessment method is methodologically neutral. Longer FFQs and dietary records are more suitable for detailed dietary assessment and validation studies, while short screeners are more practical for population screening and ranking. Accuracy depends on the definition of UPF categories, the level of product detail, the local food context, the respondent’s ability to identify products and the choice of reference method [7,9,12,14].

Regional availability of instruments and data

The regional literature shows that Republic of Serbia, Bosnia and Herzegovina, Montenegro and Croatia have established sources of dietary intake data, but no publicly available validated short NOVA-UPF or sQ-HPF screener for the general adult population was identified. Available evidence mainly includes national dietary surveys based on the EFSA EU Menu methodology, validated or evaluated FFQ instruments for general or nutrient-specific dietary assessment, and individual studies applying NOVA or SIGA classification to data obtained through more detailed dietary methods [25-27].

In Republic of Serbia, recent dietary intake data have been collected within the EFSA EU Menu framework. The national survey in children aged 1–9 years provided data on food intake, macronutrient intake and anthropometric status, but did not include a short tool for UPF screening [28]. In adults, the EFSA EU Menu survey conducted between 2017 and 2022 included 1139 participants aged 18–64 years and provides an important basis for assessing energy and macronutrient intake in the Republic of Serbian adult population; however, it does not represent a NOVA-UPF screener [29]. Republic of Serbia also has experience in dietary questionnaire development: a semi-quantitative FFQ for young adults aged 18–30 years was evaluated against three 24-hour recalls in 93 participants, but it was not designed to assess UPF intake according to NOVA [26]. A folate-specific FFQ validated in women of reproductive age further confirms methodological capacity for questionnaire-based dietary assessment, although it remains nutrient-specific rather than UPF-specific [30].

In Bosnia and Herzegovina, available studies describe diet quality and the urban food environment, but no validated short UPF screening tool was identified. A study of adult diet quality using the Prime Diet Quality Score reported unfavourable intake patterns, including higher consumption of refined grains, full-fat dairy products and processed meat, alongside lower intake of whole grains, nuts and fish [31]. A separate study of street food and takeaway food in Sarajevo and Banja Luka included 194 street food and 154 takeaway sites, with direct observation of purchased items. In total, 929 purchased products were recorded, and part of the analysed offer showed high contents of saturated and trans fats, sodium and low potassium content. This study is relevant for understanding the regional urban food environment, but it did not use a NOVA-UPF screener or a validated questionnaire for habitual UPF intake [32].

In Montenegro, national dietary intake data have also been collected through the EFSA EU Menu approach. The adult survey conducted between 2017 and 2022 included nationally representative data for participants aged 18–74 years from the northern, central and coastal regions, enabling assessment of energy and macronutrient intake but not UPF screening [33]. EFSA sources additionally confirm national dietary research in Montenegrin children, indicating an existing infrastructure for dietary monitoring, but not a validated short UPF screener [34].

Croatia currently provides the most direct regional evidence on the application of the NOVA classification. Ilić et al. used 3-day dietary records in school-aged children

and classified all foods and beverages according to NOVA. Ultra-processed foods accounted for 38.1% of total daily energy intake, the same proportion as unprocessed or minimally processed foods. Children with higher UPF energy contribution had lower intakes of animal protein, polyunsaturated fatty acids, vitamin A and most minerals, and higher carbohydrate intake [27]. This study is the closest regional match to the topic of the present review, but it used dietary records in a paediatric sample rather than a short validated screener for the general adult population.

Croatian grey literature also includes clinical applications of processing-level assessment. In patients with chronic obstructive pulmonary disease, 24-hour recalls were used and foods were classified according to NOVA and SIGA, with higher UPF intake reported among participants with more severe disease [35]. In adolescents with Crohn's disease, foods were classified using SIGA, and ultra-processed foods made the largest contribution to total energy intake [36]. These works indicate growing regional interest in food processing as a dietary assessment dimension, but they do not represent validated short UPF screeners.

Overall, the regional evidence points to a clear methodological gap. Republic of Serbia, Bosnia and Herzegovina and Montenegro have dietary intake data from national or regionally harmonised surveys, while Croatia provides the most direct examples of NOVA and SIGA application in research and clinical samples. However, no short, validated, regionally adapted NOVA-UPF or sQ-HPF screener for the general adult population was identified in the available literature. Current regional practice appears stronger in detailed dietary assessment than in brief screening tools, supporting the need for a locally adapted questionnaire for rapid assessment of ultra-processed food intake.

The Need for Regional Adaptation of a NOVA-UPF Instrument

Regional adaptation of a NOVA-UPF instrument is necessary because both the amount and main sources of ultra-processed food intake differ across food systems. In European adults, the energy share of ultra-processed foods ranged from approximately 14% to 44%, with fine bakery products and sugar-sweetened beverages among the main contributors [37]. Household availability data from 19 European countries showed a comparable range, from 10.2% in Portugal to 50.4% in the United Kingdom [1]. Food supply data from Republic of Slovenia further support this heterogeneity: among 23,173 packaged foods and beverages, 54.5% were classified as ultra-processed, with the highest proportions in confectionery, bread and bakery products, meat products and convenience foods [38].

For Republic of Serbia, Bosnia and Herzegovina, Montenegro and Croatia, a regional NOVA-UPF/HPF screener should therefore start from locally frequent categories, including packaged salty snacks, sugar-sweetened and carbonated beverages, energy drinks, industrial biscuits and wafers, packaged sweet and savoury pastries, processed meats, pâtés, sausages, instant products, ready meals, fast food, sweetened dairy products, industrial sauces and "fit" industrial products. This list should be treated as

a preliminary framework and tested through expert review, pilot testing and comparison with detailed dietary assessment methods.

A central classification problem is that the same food group may include products with different processing levels. Bread, pastries, sandwiches, cakes, meat products and ready meals may be homemade, artisanal, industrially processed or ultra-processed. Therefore, the instrument should include specific questions on preparation method, product type and industrial formulation. UPF-oriented FFQ protocols also emphasise this distinction to reduce misclassification [9].

International adaptations show that direct translation is not sufficient. The Portuguese Nova-UPF screener used national intake data, Delphi methodology and validation against 24-hour recall, while the Senegalese version combined expert review, food-market data and restructuring of product categories [19,20]. The Ecuadorian NOVA 27 screener selected local categories according to their contribution to total UPF-derived energy intake [21]. A Balkan instrument should therefore be developed as a locally adapted tool, not as a literal translation of an existing model.

A short sociodemographic module should also be included, since UPF intake varies by age, urbanisation, income, education, region and marital status [39]. Basic data on sex, age, education, employment, residence and approximate socioeconomic position would allow subgroup analyses.

Methodologically, a regional NOVA-UPF/HPF screener should include category selection, expert review, pilot testing, test-retest reliability and validation against 24-hour recall or multi-day dietary records. Its score should indicate frequency and relative level of UPF intake, not precise grams or energy share. This is particularly relevant in a region with existing dietary assessment infrastructure, but without an identified validated short NOVA-UPF or sQ-HPF tool for the general adult population.

Methodological Requirements for Developing and Validating a Regional NOVA-UPF Module

A regional NOVA-UPF/HPF module should build on the existing dietary assessment infrastructure in the region, but it should not be treated as a substitute for 24-hour recalls, dietary records or general FFQs. The implementation of the EFSA EU Menu methodology and the DIET ASSESS and PLAN platform in Balkan dietary surveys shows that the region has a methodological basis for standardised dietary assessment, but lacks a simpler validated tool for rapid UPF screening [25].

The first requirement is the definition of locally relevant UPF categories. These categories cannot be directly transferred from Brazilian, Portuguese, Senegalese or Ecuadorian tools, because food markets, product names and consumption patterns differ across countries. Adaptations of the Nova-UPF screener in Portugal, Senegal

and Ecuador show that short instruments require local dietary data, expert review and identification of the product categories that contribute most to UPF intake [19-21].

Content validation should include experts in nutrition, public health, food technology and epidemiology. Their task would be to assess whether the proposed categories fit the NOVA concept, reflect common regional products and remain understandable to respondents. Delphi methodology, used in previous Nova-UPF screener adaptations, offers a structured model for reaching expert consensus during cultural and market-specific adaptation [19,20].

Pilot testing should assess clarity, completion time and the ability of respondents to distinguish homemade, artisanal, industrially processed and ultra-processed versions of similar foods. This is particularly important for bread, pastries, sandwiches, dairy products, ready meals, processed meats and "fit" products. UPF-oriented FFQ protocols emphasise the need to distinguish industrial, artisanal and homemade products, since this directly affects classification accuracy [9].

Reliability and validity should be assessed before wider use. Test-retest reliability would evaluate score stability over time, while validation should compare the module with a reference dietary method, such as one or more 24-hour recalls, multi-day dietary records or weighed dietary records in a subsample. This approach is consistent with validation studies of NOVA-FFQ instruments and short Nova-UPF screeners [6,8,19-21].

Scoring should remain simple and interpretable. A frequency-based score could assign points to each UPF category and classify respondents into lower, medium and higher intake groups. The Korean simplified NOVA-UPF score applied this principle by scoring frequency from 0 to 5 across 10 product groups, producing a total score from 0 to 50, although the authors emphasised the need for further validation [16]. For a regional module, the score should indicate frequency and relative level of UPF intake, not grams or percentage of total energy.

The validation phase should also test how well the score ranks participants. The regional score should be compared with the UPF energy share estimated by the reference method, with agreement assessed across tertiles, quartiles or quintiles of intake. Previous screener validations used not only correlations, but also agreement indices such as PABAK or similar classification metrics [19-21].

Because the module would likely be used in online surveys, questions should be short, examples locally recognisable and mandatory fields limited. Electronic administration is feasible, but its scientific value depends on clear wording, adequate validation and controlled interpretation of the score [17,19,23].

Finally, the module should include a brief sociodemographic section. Data on sex, age, education, residence, settlement type, employment and approximate socioeconomic position would allow analysis of UPF intake across population

subgroups. This is methodologically relevant because UPF intake varies according to sociodemographic characteristics in nationally representative studies [39].

In summary, a regional NOVA-UPF/HPF module should be developed as a short screening instrument with locally relevant categories, expert-confirmed content, pilot-tested wording, demonstrated reliability, validation against a reference method and documented ability to rank respondents by UPF intake. Its role would be to bridge the gap between detailed dietary assessment and the need for rapid public-health screening in the region.

Conclusion

Assessment of ultra-processed food intake cannot rely only on conventional dietary instruments. Standard FFQs, 24-hour recalls and dietary records remain valuable, but they often fail to capture the processing level of foods with sufficient precision, particularly when homemade, artisanal and industrial products share the same food-group label.

International evidence shows that NOVA-based FFQs, NOVA-UPF screeners and the sQ-HPF can support UPF assessment, but their use depends on the research aim. Longer instruments are better suited for detailed dietary assessment and validation studies. Short screeners are more useful for population screening, online surveys and ranking individuals by relative UPF intake. They should not be interpreted as tools for precise estimation of grams or total energy share without appropriate validation.

The regional review identified dietary assessment infrastructure in Republic of Serbia, Bosnia and Herzegovina, Montenegro and Croatia, including EU Menu-based surveys, FFQ development and individual applications of NOVA or SIGA classification. However, no publicly available validated short NOVA-UPF or sQ-HPF screener for the general adult population was identified in these countries.

This gap supports the development of a regionally adapted NOVA-UPF/HPF module. Such an instrument should be based on locally relevant product categories, expert-confirmed content, pilot-tested wording, test-retest reliability and validation against a reference dietary method. Its main value would be rapid, standardised identification of frequent UPF consumption patterns and classification of respondents into meaningful intake groups. A validated regional screener could strengthen dietary surveillance, support future epidemiological studies and provide a practical basis for public-health interventions aimed at improving diet quality.

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PROCENA UNOSA ULTRA-PRERAĐENE HRANE: METODOLOŠKI PREGLED POSTOJEĆIH INSTRUMENATA I POTREBA ZA REGIONALNO PRILAGOĐENIM NOVA-UPF SCREENER-OM

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Sažetak.*Procena unosa ultra-prerađene hrane predstavlja važan metodološki izazov u prehrambenoj epidemiologiji, jer klasični instrumenti za procenu ishrane često ne razlikuju domaće, zanatske, industrijski prerađene i ultra-prerađene oblike sličnih proizvoda. Cilj ovog rada bio je da se prikažu dostupni instrumenti za procenu konzumiranja ultra-prerađene i visoko prerađene hrane, sa posebnim osvrtom na njihovu potencijalnu primenljivost u Srbiji, Bosni i Hercegovini, Crnoj Gori i Hrvatskoj. Sproveden je ciljani narativni metodološki pregled javno dostupnih izvora, uključujući PubMed/MEDLINE, Google Scholar, ScienceDirect, Hrčak, SCIndeks, COBISS kataloge, EFSA izvore i Global Diet Quality Project. Pretraga je obuhvatila radove objavljene od 2009. do 2026. godine, na engleskom i jezicima regiona. Uključeni su radovi koji opisuju razvoj, validaciju, adaptaciju ili primenu FFQ instrumenata, NOVA-UPF screener-a, sQ-HPF alata ili regionalnih podataka o proceni ishrane. Međunarodni nalazi pokazuju da NOVA-orijentisani FFQ mogu proceniti uobičajeni unos i rangirati ispitanike prema relativnom unosu ultra-prerađene hrane, ali su manje pogodni za preciznu kvantifikaciju apsolutnog unosa. Kratki NOVA-UPF i HPF screener-i praktičniji su za populacioni skrining i online istraživanja, ali zahtevaju lokalnu adaptaciju, ekspertsku proveru, pilot testiranje, procenu test-retest pouzdanosti i validaciju prema referentnim dijetetičkim metodama. Regionalni podaci potvrđuju postojanje infrastrukture za procenu ishrane, uključujući EU Menu istraživanja, razvoj FFQ instrumenata i pojedinačne primene NOVA ili SIGA klasifikacije. Međutim, u analiziranim zemljama nije identifikovan javno dostupan validiran kratak NOVA-UPF ili sQ-HPF screener za opštu odraslu populaciju. Nalazi podržavaju razvoj regionalno prilagođenog NOVA-UPF/HPF modula zasnovanog na lokalno relevantnim kategorijama proizvoda, namenjenog skriningu i rangiranju, a ne preciznoj proceni gramaže ili energetskog udela.*

Ključne riječi: *ultra-prerađena hrana, NOVA klasifikacija, procena ishrane, screener, regionalna adaptacija*