Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Kimchi as Korean fermented-food heritage in everyday meal practices: a qualitative focus group study in the United States and United Kingdom

Chang Hyeon Lee
leech09@wikim.re.kr
World Institute of Kimchi
Young Ju Ko
World Institute of Kimchi
Yong Min Kwon
World Institute of Kimchi
Min Ji Song
World Institute of Kimchi
Chae Lin Park
World Institute of Kimchi

Research Article

Keywords: kimchi, everyday food practices, practical competence, fermented foods, food acceptance, authenticity

Posted Date: September 20th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-10772504/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Version of Record: A version of this preprint was published at Journal of Ethnic Foods on November 2nd, 2026. See the published version at https://doi.org/10.1186/s42779-026-00339-0.

Abstract

Kimchi is a Korean lactic acid-fermented vegetable food and cultural tradition shaped by seasonal preservation, regional diversity, and *kimjang*. This exploratory qualitative study examined how consumers in the United States and United Kingdom interpreted kimchi and described incorporating, or not incorporating, it into everyday meals. Four online focus groups conducted in August 2023 comprised 14 participants: six U.S. consumers stratified by consumption frequency, four U.K. consumers, and four U.K. non-consumers. Transcripts were analyzed thematically using sensitizing concepts from food choice and practice theory; inductively derived, negative, and ambivalent cases were retained. Participants initially classified kimchi through relational categories such as side dish, pickle, salad, or ingredient. Sensory uncertainty concerned unfamiliar aroma, sourness, texture, and fermentation-related variation. Four analytic positions—routine use, partial incorporation, selective incorporation, and pre-trial uncertainty—differed in the practical competence available to support use. Familiar-food pairing, routine-building, portion and sensory adjustment, and guided exposure were described as ways to make kimchi easier to serve and eat in everyday meals. Cultural authenticity could motivate learning but also heighten uncertainty. Within this small purposive sample, the findings suggest that incorporating an ethnic fermented food into everyday meals involves practical competence as well as sensory acceptance. Consumer education may benefit from pairing heritage context with concrete guidance on selection, storage, portioning, and meal use.

Introduction

Kimchi is a Korean lactic acid-fermented vegetable food and a form of ethnic food heritage shaped by the Korean Peninsula's four-season climate. Fresh vegetable harvests were concentrated in warmer months, whereas winter restricted access to fresh vegetables. Therefore, salting and fermentation emerged as practical ways to preserve vegetables for cold-season meals. This seasonal logic is expressed collectively in *kimjang*—the late-autumn making and sharing of kimchi for winter—which was included in UNESCO's Representative List of the Intangible Cultural Heritage of Humanity in 2013 and continues to link household subsistence, intergenerational knowledge, and communal identity [1–3].

Kimchi does not have a fixed recipe. Before red pepper was incorporated into kimchi-making from the seventeenth century onward, documented forms emphasized vegetables preserved in brine or soy-sauce-based liquids and used relatively limited seasoning. From the eighteenth century, improvements in salting and increasingly complex seasonings—including red pepper, garlic, ginger, and more frequent use of *jeotgal* and seafood—expanded red, seasoned forms. Nonetheless, the basic culinary structure remained combinatory: vegetables are prepared with a seasoning mixture, then transformed through fermentation [4–6].

Regional repertoires further reflect climate, agriculture, and fisheries rather than a single national style. Jeolla traditions are associated with generous seasoning and *jeotgal*, with *gat kimchi* as a well-known form. Gyeongsang styles are typically saltier and more pungent and often use anchovy fish sauce.

Kimchi traditions in the colder Hamgyeong region use lighter seasoning, abundant broth, and lean fish such as pollock or cod, while Jeju styles draw on island seafood with comparatively simple seasoning. Across this diversity, lactic acid bacteria generally drive fermentation, producing organic acids, ethanol, carbon dioxide, and mannitol that contribute to kimchi's sensory and preservation properties [7–10].

Kimchi fermentation involves ecological succession rather than the action of a single organism. Temperature, salt concentration, raw ingredients, and storage conditions favor the growth of different microbial taxa and alter their relative abundance. The relative abundances of *Leuconostoc* spp., *Weissella* spp., and *Lactobacillus*-related taxa can therefore change during fermentation without following a single fixed sequence [7–10]. Their carbohydrate metabolism produces lactic and acetic acids, ethanol, carbon dioxide, and mannitol. Strain-specific bioactive peptides have also been documented: *Leuconostoc citreum* GJ7 produces the bacteriocin kimchicin GJ7 [11], and the cyclic dipeptides cyclo(Ser-Pro), cyclo(Tyr-Pro), and cyclo(Leu-Pro) have been identified in cabbage kimchi fermented with *Leuconostoc mesenteroides* LBP-K06 [12]. These findings concern particular strains and fermentation conditions and should not be generalized to all kimchi products. Organic acid accumulation lowers pH and contributes to preservation and sourness; carbon dioxide contributes to carbonation; mannitol can temper acidity with mild sweetness; and bacteriocins may suppress competing bacteria. Experimental, observational, and limited intervention studies have examined kimchi, its lactic acid bacteria, or their metabolites in relation to adiposity, serum cholesterol and other lipid outcomes, and gut microbiome modulation. These findings suggest functional potential but do not establish a uniform clinical effect, because composition, fermentation stage, dose, and study design vary [7–9].

Outside Korea, kimchi is increasingly available in supermarkets and restaurants and visible in the media. Yet visibility, availability, and recognition alone do not explain whether consumers can place kimchi within ordinary meals. For unfamiliar fermented foods, adoption depends not only on liking but also on how people classify the food, interpret changing sensory signals, and decide when, with what, and in what amount it can be consumed.

Food neophobia offers one explanation for hesitancy toward unfamiliar foods [13, 14]. Kimchi may intensify uncertainty because its sourness, aroma, carbonation, and texture change with fermentation; sensory research has likewise shown that preferences differ depending on fermentation stage and formulation [15, 16]. However, a focus on acceptance alone can miss the practical reasoning through which a food becomes part of everyday eating routines.

Food choice research distinguishes sensory appeal from convenience, familiarity, perceived healthfulness, and social setting [17]. Practice-oriented accounts further suggest that routines emerge through the alignment of materials, meanings, and practical competence [18, 19]. For kimchi, cultural meaning and authenticity may also guide categorization: consumers encounter it as a Korean heritage food, a condiment, a side dish, an ingredient, or a fermented health food, and these categories may enable or constrain use [20–22]. We therefore asked: (1) how do consumers in the United States and

United Kingdom categorize kimchi; (2) how do they interpret its sensory and cultural qualities; and (3) what practical knowledge supports or obstructs its incorporation into everyday meals?

Methods

Study design and participants

This qualitative study used online focus groups to examine shared meanings, sensory uncertainty, and imagined or reported meal practices. Four consumer focus groups were conducted in August 2023 with 14 participants in the United States and United Kingdom (Table 1). Participants were purposively recruited through a screening questionnaire assessing age, citizenship, awareness of Korean culture and kimchi, prior kimchi consumption, consumption frequency, engagement with foods from other cultures, previous residence in Asian countries, Korean family or spousal background, and rejection of Korean food.

Eligible participants were adults aged 20–49 years with U.S. or U.K. citizenship. Individuals were excluded if they had lived in an Asian country for more than one year, were Korean American or Korean British, had a Korean spouse, or rejected Korean food. The U.S. high-frequency group included participants who consumed kimchi, in some form, at least once every three months; the U.S. mid- to low-involvement group included those who had either tried kimchi or consumed it less often. These labels describe the relative recruitment strata within this study rather than validated population-level frequency categories. The U.K. groups distinguished consumers from kimchi-aware non-consumers. Non-consumers had never consumed kimchi but regularly consumed foods from other cultures. A separate focus group with food-industry workers was excluded because the present analysis concerns consumer interpretation and everyday food practices. The groups were designed for analytic contrast, not statistical national comparison.

Focus group procedure and materials

Each group lasted approximately 90 minutes and was led by an independent professional moderator. Participants were informed that there were no right or wrong answers and were encouraged to discuss their own experiences. Sessions were video- and audio-recorded, and the recordings were used to prepare English- and Korean-language transcripts.

The consumer guide covered initial awareness, information seeking, first consumption, current consumption practices, perceived health meanings, fermentation, and information needs. The non-consumer guide first examined experiences with foods from other cultures and then addressed kimchi awareness, information seeking, barriers to trial, and future willingness. Visual prompts presented four kimchi varieties: *baechu* kimchi, the widely recognized form made from salted *napa* cabbage coated with a red pepper-based seasoning; *mul* kimchi, a mild, broth-rich water kimchi; *oi* kimchi, a crisp cucumber kimchi usually seasoned and eaten relatively fresh; and *mu* kimchi, a radish-based kimchi represented by

cubed or cut radish forms. These varieties were selected to span cabbage-based, broth-based, cucumber, and radish formats. Additional prompts included kimchi fried rice, kimchi *jjigae*, kimchi *jeon*, kimchi tacos, burritos, fries, hamburgers, and sandwiches. Responses to prompts were treated as elicited interpretations and imagined uses, rather than direct evidence of established behavior. Representative images of these four prompt categories are shown in Fig. 1.

Analysis and reflexivity

Transcripts were coded manually without qualitative analysis software. Repeated reading identified passages concerning awareness, food categorization, sensory uncertainty, health-related meanings, authenticity, social introduction, pairing, cooking, storage, meal placement, ingredient concerns, information seeking, and practical competence. Codes were then grouped into broader themes, including food categorization and meal placement, sensory uncertainty and reinterpretation, and practical competence. Comparisons were made first within groups and then across groups to identify positions ranging from routine use to pre-trial uncertainty. Negative and ambivalent accounts were retained. Reporting was informed by relevant Consolidated Criteria for Reporting Qualitative Research (COREQ) items for interviews and focus groups [23]. Because the lead analyst conducted coding and thematic interpretation, intercoder reliability was not calculated; rigor was supported through repeated reading, documentation of coding decisions, within- and across-group comparison, attention to negative cases, and illustrative quotations.

Given that each group contained only three or four participants and recruitment prioritized analytic contrast rather than iterative theoretical sampling, data saturation was not claimed. The analysis is therefore framed as an exploratory thematic mapping of contrasting positions. Recurrent patterns across groups were treated as analytic convergence, while group-specific, negative, and ambivalent cases were retained; no claim was made that additional groups would yield no new themes.

The lead analyst's professional background in kimchi research required reflexive attention. Kimchi was not treated as inherently desirable; analysis focused on how participants made it meaningful, useful, uncertain, or difficult through their own accounts. Participant names were replaced with anonymized participant IDs that encode only country/group and sequence (Table 2). Quoted excerpts were lightly trimmed only to remove repetition, filler words, and transcription artifacts without altering substantive meaning.

Ethics approval and consent

The study was approved by the Public Institutional Bioethics Committee of Korea (Approval No. P01-202608-01-028). All participants provided informed consent before participation and consented to video and audio recording for research documentation and analysis. Transcripts were handled in anonymized form for manuscript preparation.

Use of generative AI in manuscript preparation

During the manuscript preparation and revision stage, OpenAI language-model tools (ChatGPT; accessed May 31, 2026) were used to support English-language refinement, Korean-English alignment, and reference formatting. They were not used to generate research data or conduct coding or thematic analysis. The authors independently verified the cited sources, reviewed the final manuscript, and take responsibility for its content.

Table 1
Focus group composition.

Country	Group	Participant type	n
United States	U.S. #1	High-frequency kimchi consumers	3
United States	U.S. #2	Mid- to low-involvement kimchi consumers	3
United Kingdom	U.K. #1	Kimchi consumers	4
United Kingdom	U.K. #2	Kimchi-aware non-consumers	4

The groups were purposively structured for analytic contrast and were not designed as statistically comparable national samples.

Table 2
Individual participant characteristics.

Participant ID	Country/group	Age (years)	Gender	Self-described background	Prior kimchi consumption
UHF1	U.S. high-frequency	34	Female	Chinese	At least weekly
UHF2	U.S. high-frequency	38	Male	White/Caucasian	About every 2 weeks
UHF3	U.S. high-frequency	41	Male	Hispanic/Latino	At least weekly
UML1	U.S. mid/low	37	Male	Black/African American	About every 3 months
UML2	U.S. mid/low	27	Female	White/Caucasian	About every 3 months
UML3	U.S. mid/low	42	Female	Black/African American	About every 3 months
UKC1	U.K. consumer	44	Female	Black	About every 2 months
UKC2	U.K. consumer	28	Male	Indian	About monthly
UKC3	U.K. consumer	30	Male	White British	At least weekly
UKC4	U.K. consumer	46	Female	White	About monthly
UKN1	U.K. non-consumer	43	Male	White British	Never
UKN2	U.K. non-consumer	37	Female	Black African	Never
UKN3	U.K. non-consumer	49	Male	White British	Never
UKN4	U.K. non-consumer	44	Female	British Asian	Never

Participant IDs are pseudonymous codes. Background terms and consumption frequencies are reported from screening responses; names and contact details are omitted. UHF = U.S. high-frequency; UML = U.S. mid- to low-involvement; UKC = U.K. consumer; UKN = U.K. kimchi-aware non-consumer.

Results

Kimchi was first understood through relational food categories

Participants often encountered kimchi through Korean restaurants, Korean barbecue, grocery stores, family or friends, media, and health-oriented food discourse. They commonly tried to understand not only what kimchi was but also where it belonged in a meal. U.S. high-frequency consumers described introductions through Korean barbecue, family food practices, food blogs, grocery stores, and probiotic or microbiome trends. U.S. mid- to low-involvement consumers recognized kimchi but more often placed it between uncertain categories such as side dish, condiment, fermented cabbage, ingredient, or unfamiliar Asian food.

Similarly, U.K. consumers relied on restaurants and social guidance. One participant recalled, “I had no idea whether it was like a starter, main, dessert” until searching for information and later trying kimchi on a friend’s recommendation (UKC2). Another first encountered it with katsu curry and described it as “a bit of a side salad” that became “a really good complement to the curry” (UKC4). Ambivalence about meal status was sharper among non-consumers: “I can’t imagine just having vegetables as my main thing” (UKN2). U.K. kimchi-aware non-consumers had heard about fermentation, probiotics, or Korean food culture, but still wanted to know what kimchi contained, what it tasted like, and how it should be eaten. Across groups, cultural recognition did not automatically provide guidance on meal placement.

Sensory uncertainty could be reinterpreted through use

Smell, sourness, fermentation, spice, and texture generated hesitation, but these qualities were not fixed barriers. A U.S. high-frequency consumer recalled, “I couldn’t get over the smell of it ... it didn’t really taste like it smelled, but it was very potent” (UHF2). A mid- to low-involvement participant described an initially negative interpretation: “That fermented taste was ... very sour, rotten almost, if like it’s been left out in the Sun a little too long” (UML1). A U.K. consumer likewise reported “a bit of scepticism” about whether kimchi would need to be eaten “periodically in short servings” because it seemed “quite intense” (UKC2). With experience, participants described pungency and acidity alongside crunchiness, freshness, natural fermentation, probiotic value, and flavor complexity.

Familiar food analogies helped less experienced participants anticipate sensory function. U.S. mid- to low-involvement consumers compared kimchi with sauerkraut, coleslaw, slaw on burgers, rice dishes, tacos, and sandwiches. U.K. non-consumers found kimchi fried rice more approachable when it resembled familiar rice dishes, whereas water kimchi remained harder to imagine. Thus, sensory qualities became more interpretable when participants could understand what those qualities might contribute to a familiar meal.

Practical competence differentiated four analytic positions

The most visible contrast across the purposively constructed groups concerned practical competence: knowledge of positioning, pairing, purchasing, storage, preparation, and use. U.S. high-frequency consumers reported the most routine and flexible incorporation. They used kimchi beyond traditional Korean meals—as a side dish, condiment, ingredient, acidic contrast, vegetable component, and flavoring

resource. One routine user said kimchi fried rice was “something I have probably twice a week” and added, “I make these ... kimchi crepes ... [and] add it into salads,” while also describing dumplings and stir-fries (UHF3). Participants also discussed purchasing kimchi from mainstream and Asian retailers, as well as comparing products by flavor, crispness, convenience, and acidity. In these accounts, kimchi functioned as a repeatable household resource rather than an occasional novelty.

U.S. mid- to low-involvement consumers showed partial incorporation. Visual prompts translated kimchi into familiar culinary contexts such as fries, tacos, sandwiches, fried rice, stew, and pancakes. Yet one participant qualified this openness: “I don’t know if I would be ready to just step out on my own and infuse that ... I would probably try it in a restaurant ... But I don’t know about making it at home” (UML3). Their accounts indicated potential usability but not stable routines; kimchi’s role remained ambiguous, functioning variously as a side dish, ingredient, condiment, and fermented vegetable.

U.K. consumers combined cultural recognition with selective domestic use. Restaurants and recommendations supplied a serving context, while some participants later bought jars for home use. One participant described a bounded routine: “Sometimes I’ll just do some scrambled eggs and have a bit of kimchi on the side ... if I do ... a curry ... or we have some noodles or stir-fry ... it just goes on the side” (UKC3). However, its use was typically more selective than in the U.S. high-frequency group, and participants continued to request guidance from trusted cooking sources regarding kimchi varieties, brands, preparation, and serving.

U.K. kimchi-aware non-consumers represented pre-trial uncertainty rather than rejection. One participant said, “As long as I know what it is. I don’t like to be surprised when I eat something” (UKN1). Another wanted a first tasting “prepared by someone who knows what they’re doing” so he could understand “how it should taste, how it’s served, hot or cold” (UKN3). Others wanted ingredient transparency and practical guidance about preparation, storage, shelf life, serving temperature, where to buy kimchi, and appropriate pairings. For this group, the principal barrier was the absence of a practical script rather than a clearly negative evaluation.

Comparative pattern

The four groups can be read as holding analytically distinct positions within a comparative framework of incorporation: routine use, partial incorporation, cultural recognition with selective incorporation, and pre-trial uncertainty. These positions should not be interpreted as representative national types because the sample was small and the U.S. and U.K. groups were structured differently. Moreover, because the U.S. recruitment strata were partly defined by prior consumption frequency, contrasts in routine use are descriptive of the sampling frame, rather than independent evidence of population differences. Across positions, kimchi appeared more incorporable when consumers could move from recognizing it as Korean, fermented, healthy, or interesting to knowing how to buy, store, and serve it, pair it with other foods, and cook with it.

Participants also expressed boundaries around these positions. A routine user said, “Some people put it on like a hamburger. I don’t really do that. I use it where it makes sense for me” (UHF2). Partial incorporation was framed as “the familiar, but then the new” (UML1). A selective U.K. consumer said, “I wouldn’t want it regularly ... just when I have a curry” (UKC4), while a non-consumer preferred “the authentic stuff” and concluded, “the fusion stuff, not really” (UKN3). These negative and ambivalent statements indicate that incorporation did not imply unrestricted or uniformly positive use.

Discussion

Practical competence as a condition of incorporation

Within these focus-group accounts, sensory preference, perceived healthfulness, cultural recognition, or willingness to try kimchi did not, on their own, fully explain its incorporation into everyday meals. These meanings became consequential for everyday eating when participants could translate them into practical use. Practice theory emphasizes the competencies, meanings, and materials through which routines are reproduced [18, 19]. In this study, practical competence connected cultural meaning to meal use: knowing whether kimchi should be eaten hot or cold, where it belongs beside rice, meat, eggs, noodles, curry, or sandwiches, and whether it can function as a side dish, ingredient, condiment, acidic contrast, or vegetable component.

This interpretation frames acceptance as a practical accomplishment, rather than a discrete evaluative response. Trial or favorable taste evaluation did not necessarily coincide with incorporation. Routine users described flexible and repeatable repertoires, whereas non-consumers could be curious and culturally receptive while remaining unable to imagine purchase, storage, serving, or pairing. A salient contrast in these accounts was therefore not simply between unfamiliarity and familiarity, but between recognizing kimchi and knowing how to purchase, store, prepare, and serve it in everyday meals.

Sensory acceptance, authenticity, and cultural meaning

Food neophobia research helps explain initial hesitation toward unfamiliar smells, sourness, fermentation, and textures [13, 14], while kimchi sensory studies identify degree of fermentation, seasoning intensity, and prior experience as important acceptance factors [15, 16]. The present findings add that sensory qualities can change meaning when consumers understand the role of those qualities in a meal. Sourness became acidity or contrast; fermentation could signify naturalness or perceived probiotic value; and strong flavor could become useful when positioned as a small component of a larger dish. These accounts suggest that the meaning of sensory qualities depended partly on their practical context.

Fermentation-stage differences have measurable chemical correlates. Kimchi metagenomic studies identify lactate, acetate, ethanol, and mannitol as the major outputs of heterofermentative lactic acid bacterial metabolism [10]. Furthermore, volatile profiling reveals that aldehydes tend to decline during fermentation, whereas the abundance of many alcohols, esters, organic acids, nitriles, and sulfur

compounds changes or increases, depending on time and temperature [24]. Falling pH and rising titratable acidity provide chemical correlates of increasing sourness, while carbon dioxide can be perceived as tingling or carbonation; sulfur volatiles derived from garlic and related ingredients contribute pungent or “stinky” notes. The combined balance of acids, volatiles, residual sugars, and mannitol provides a possible chemical context for the “complexity” described by participants. These literature-based explanations should not be interpreted as measurements of the kimchi encountered by participants. Descriptors such as mild, sour, fizzy, sharp, or harsh should not be treated as fixed properties of kimchi, but as possible indicators of fermentation stage, formulation, and storage history.

This interpretation also has a practical implication for consumer communication. Labels, tasting sessions, or educational materials could distinguish fresh/mild, ripe/tangy, and aged/strong profiles and pair each stage with storage, portioning, and meal-use suggestions. Such descriptions could present variability as an expected feature of fermentation and help consumers distinguish expected sensory changes from concerns about spoilage, without treating acidity, carbonation, or pungency alone as evidence of either spoilage or safety.

Kimchi’s Korean cultural associations also increased curiosity and symbolic value, consistent with research on culinary mobility and socially constructed authenticity [20–22]. Yet authenticity alone did not provide a meal-use script. Some participants wanted an “original” or “authentic” first experience before experimenting with fusion dishes, while others valued Korean identity but remained unsure about storage, temperature, pairings, and home preparation. Cultural specificity and practical adaptability were not opposites; participants could preserve recognition of kimchi as Korean while using it flexibly in non-Korean meals.

Implications, limitations, and future research

For producers, retailers, restaurants, and food educators, the findings suggest that visibility, health messaging, and authenticity claims should be accompanied by concrete use guidance. Information on ingredients, flavor expectations, refrigeration and storage, serving temperature, portioning, pairings, and simple uses in both Korean and familiar local dishes may reduce practical uncertainty. Tasting opportunities, recipe cards, retail placement cues, restaurant explanations, and short digital cooking content could help consumers acquire competence without detaching kimchi from its Korean cultural context.

The study has several limitations. First, the purposive sample was small and not representative of U.S. or U.K. consumers. The U.S. groups were differentiated by consumption frequency, whereas the U.K. groups distinguished consumers from non-consumers. Consequently, the observed contrasts partly reflect the sampling design and should not be interpreted as evidence of national differences. Data saturation was not claimed, and the analysis provides an exploratory mapping of the accounts collected. Second, the analysis examined focus-group accounts rather than observed household behavior, and interaction among participants may have shaped responses. Visual prompts may also have encouraged imagined uses that were not part of participants’ existing routines. As the original prompt image files were not

retained, Fig. 1 uses representative photographs and cannot document the exact visual stimuli viewed by participants. Furthermore, health-related comments were analyzed as consumer meanings and should not be interpreted as evidence of biomedical effects. Future ethnographic, diary-based, or household studies could examine how competence develops through purchasing, storage, cooking, and repeated meal use over time.

Conclusions

In these focus-group accounts, kimchi appeared easier to incorporate into everyday meals when participants could translate sensory and cultural recognition into practical knowledge. Routine users described knowing how to position, pair, purchase, store, and cook with kimchi, whereas less experienced consumers often remained interested but uncertain about its role in a meal and how to handle it. The findings suggest that the everyday incorporation of culturally marked fermented foods may involve not only favorable evaluation or authenticity, but also practical competence that supports repeated use. Communication strategies could therefore combine cultural context with concrete meal-use guidance, while avoiding claims beyond the consumer meanings documented in this exploratory study.

Abbreviations

COREQ
Consolidated Criteria for Reporting Qualitative Research

Declarations

Ethics approval and consent to participate

This study was approved by the Public Institutional Bioethics Committee of Korea (Approval No. P01-202608-01-028). All participants provided informed consent before taking part in the focus groups and consented to video and audio recording for research documentation and analysis.

Consent for publication

Not applicable.

Availability of data and materials

The focus group transcripts contain potentially identifying qualitative data and are not publicly available. De-identified excerpts may be made available from the corresponding author upon reasonable request and subject to institutional approval.

Competing interests

The authors declare that they have no competing interests.

Funding

This work was supported by the World Institute of Kimchi (KEB2602-3-2), funded by the Ministry of Science and ICT, Republic of Korea.

Authors' contributions

CHL conceptualized the study and led the research design, investigation, original drafting, and final revision. YJK, YMK, CLP, and MJS contributed substantially to research planning, investigation, manuscript review, and finalization. All authors read and approved the final manuscript.

Acknowledgements

The authors thank the focus group participants and moderators for their contributions to this research.

Authors' information

Not applicable.

References

1. Surya R, Lee AGY. Exploring the philosophical values of kimchi and kimjang culture. J Ethn Foods. 2022;9:20. doi:10.1186/s42779-022-00136-5.
2. Surya R, Nugroho D. Kimchi throughout millennia: a narrative review on the early and modern history of kimchi. J Ethn Foods. 2023;10:5. doi:10.1186/s42779-023-00171-w.
3. Kwon DY, Chung KR, Daily JW, Park S. Geohistorical evolution of kimchi as an ethnic food. J Ethn Foods. 2025;12:11. doi:10.1186/s42779-025-00271-9.
4. Lee CH, Ko YJ. A new process on the basic formula of kimchi: derived kimchi from a combination of yangnyeom (kimchi sauce) and vegetables. J Ethn Foods. 2021;8:34. doi:10.1186/s42779-021-00110-7.
5. Kwon DY, Kim SH, Chung KR, Daily JW, Park S. Science and philosophy of Korea traditional foods (K-food). J Ethn Foods. 2023;10:26. doi:10.1186/s42779-023-00194-3.
6. Park CL, Shin D. The emergence and spread of seasoned kimchi in the late Joseon period. Dongbuga Yeoksa Nonchong. 2024;(86):235–274. doi:10.23037/dyn.2024..86.007.

7. Kwon DY, Chung KR, Lee CH, Kim SH, Daily JW, Park S. Scientific knowledge and wisdom of kimchi: a blessing Korean. J Ethn Foods. 2025;12:8. doi:10.1186/s42779-025-00269-3.
8. Park KY, Hong GH, Lee SY, Lee YJ. Kimchi and its antiobesity and anticancer functions. J Ethn Foods. 2024;11:37. doi:10.1186/s42779-024-00250-6.
9. Lee CH, Ahn J, Son HS. Ethnic fermented foods of the world: an overview. J Ethn Foods. 2024;11:39. doi:10.1186/s42779-024-00254-2.
10. Jung JY, Lee SH, Kim JM, Park MS, Bae JW, Hahn Y, Madsen EL, Jeon CO. Metagenomic analysis of kimchi, a traditional Korean fermented food. Appl Environ Microbiol. 2011;77(7):2264–74. doi:10.1128/AEM.02157-10.
11. Chang JY, Lee HJ, Chang HC. Identification of the agent from Lactobacillus plantarum KFRI464 that enhances bacteriocin production by Leuconostoc citreum GJ7. J Appl Microbiol. 2007;103(6):2504–15. doi:10.1111/j.1365-2672.2007.03543.x.
12. Liu R, Kim AH, Kwak MK, Kang SO. Proline-based cyclic dipeptides from Korean fermented vegetable kimchi and from Leuconostoc mesenteroides LBP-K06 have activities against multidrug-resistant bacteria. Front Microbiol. 2017;8:761. doi:10.3389/fmicb.2017.00761.
13. Pliner P, Hobden K. Development of a scale to measure the trait of food neophobia in humans. Appetite. 1992;19(2):105–20. doi:10.1016/0195-6663(92)90014-W.
14. Tuorila H, Lähteenmäki L, Pohjalainen L, Lotti L. Food neophobia among the Finns and related responses to familiar and unfamiliar foods. Food Qual Prefer. 2001;12(1):29–37. doi:10.1016/S0950-3293(00)00025-2.
15. Jang SH, Kim MJ, Lim J, Hong JH. Cross-cultural comparison of consumer acceptability of kimchi with different degree of fermentation. J Sens Stud. 2016;31(2):124–34. doi:10.1111/joss.12198.
16. Park HJ, Ko JM, Lim J, Hong JH. American consumers' perception and acceptance of an ethnic food with strong flavor: a case study of kimchi with varying levels of red pepper and fish sauce. J Sci Food Agric. 2020;100(6):2348–57. doi:10.1002/jsfa.10106.
17. Furst T, Connors M, Bisogni CA, Sobal J, Falk LW. Food choice: a conceptual model of the process. Appetite. 1996;26(3):247–66. doi:10.1006/appe.1996.0019.
18. Reckwitz A. Toward a theory of social practices: a development in culturalist theorizing. Eur J Soc Theory. 2002;5(2):243–63. doi:10.1177/13684310222225432.
19. Warde A. Consumption and theories of practice. J Consum Cult. 2005;5(2):131–53. doi:10.1177/1469540505053090.
20. Cook I, Crang P. The world on a plate: culinary culture, displacement and geographical knowledges. J Mater Cult. 1996;1(2):131–53. doi:10.1177/135918359600100201.
21. Lu S, Fine GA. The presentation of ethnic authenticity: Chinese food as a social accomplishment. Sociol Q. 1995;36(3):535–53. doi:10.1111/j.1533-8525.1995.tb00452.x.
22. DeSoucey M. Gastronationalism: food traditions and authenticity politics in the European Union. Am Sociol Rev. 2010;75(3):432–55. doi:10.1177/0003122410372226.

23. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007;19(6):349–57. doi:10.1093/intqhc/mzm042.
24. Hong SP, Lee EJ, Kim YH, Ahn DU. Effect of fermentation temperature on the volatile composition of kimchi. J Food Sci. 2016;81(11):C2623-C2629. doi:10.1111/1750-3841.13517.
25. Kwangmo. Baechu kimchi. Wikimedia Commons. 2015. https://commons.wikimedia.org/wiki/File:Baechu_kimchi.jpg. Accessed 2 Sep 2026.
26. karendotcom127. Korean-Dongchimi-01. Wikimedia Commons. 2007. https://commons.wikimedia.org/wiki/File:Korean-Dongchimi-01.jpg. Accessed 2 Sep 2026.
27. Lim C. Oi-sobagi. Wikimedia Commons. 2013. https://commons.wikimedia.org/wiki/File:Oi-sobagi.jpg. Accessed 2 Sep 2026.
28. lazy fri13th. Kkakdugi. Wikimedia Commons. 2018. https://commons.wikimedia.org/wiki/File:Kkakdugi.jpg. Original source: https://www.flickr.com/photos/fri13th/46874842651/. Accessed 6 Sep 2026.

Figures

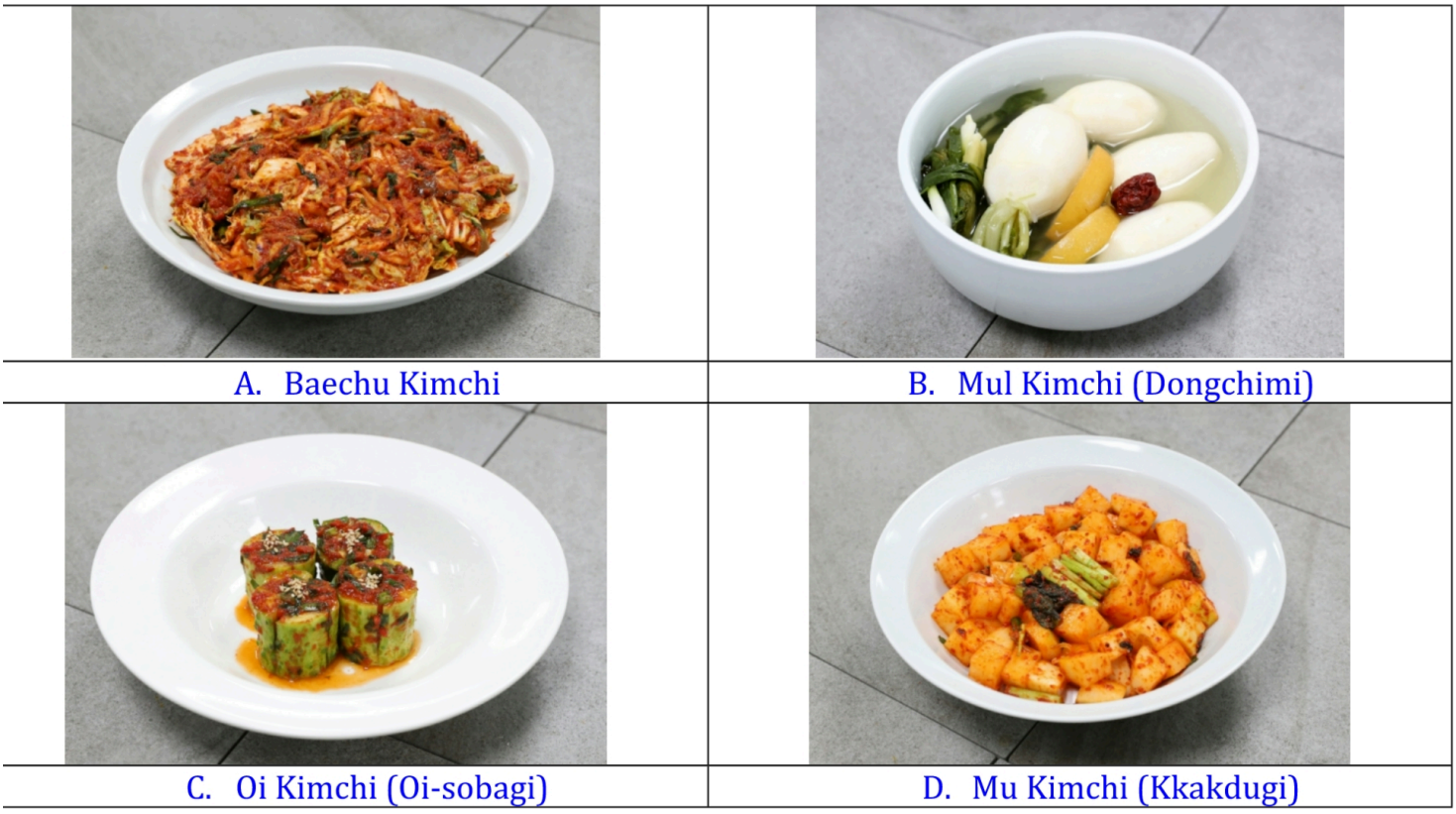


Figure 1

Representative photographs illustrating the four kimchi categories discussed during the focus groups: (a) *baechu* kimchi, (b) *mul* kimchi (*dongchimi*), (c) *oi* kimchi (*oi-sobagi*), and (d) *mu* kimchi (*kkakdugi*).