## International Society for Nutritional Psychiatry Research consensus position statement: nutritional medicine in modern psychiatry

In recent years, there has been an unprecedented growth in both the quantity and methodological quality of research directed at exploring the relationship between nutrition and mental health. Indeed, the strength of data has now afforded nutritional medicine a place in the mainstream psychiatric discourse (1).

Robust associations have been established between nutritional quality and mental health, with the bulk of this evidence indicating a protective effect of healthy diets on depressed mood (2), and the newest research supporting a detrimental impact of unhealthy diets on the mental health of young people (3,4) and adults (5,7).

There are also convincing data supporting the application of certain nutrient-based supplements (nutraceuticals) as monotherapy or combined therapy (8), or as augmentation therapy (9).

Although the growth in scientific research related to nutrition in psychiatry may be recent, it is now at a stage where it can no longer be ignored. In light of this, we aim to provide a platform to move towards a new integrated paradigm in psychiatry whereby nutritional considerations (both educational and prescriptive) can be considered "mainstream" (1). To this end, we present a consensus position statement from the International Society for Nutritional Psychiatry Research (ISNPR).

In brief, the ISNPR was formed in 2013 with the aim to advance research and communication on nutritional medicine in the field of psychiatry. One of its first goals was to formulate a position statement that embodied the principles of the organization, allowing for codification of the society's underpinning tenets.

In order to develop this, we employed a Delphi-based model by which ISNPR researcher and clinician members could vote on a select list of 110 statements created by an expert steering committee.

The committee provided a list of sub-statements concerning three main topics/areas: the current general needs and challenges in psychiatry; key elements of diet and nutraceutical evidence related to mental health/psychiatry; potential public health and clinical applications. These were transcribed and tabulated in Survey Monkey for online voting by the wider ISNPR membership.

A Likert scale (0-10) was used for each statement (0=don't include, 5=don't know/depends, 10=definitely include), and statements that received a mean score of >6.5/10 by ISNPR members were reviewed by the steering committee for inclusion in the position statement, which is presented below.

Present treatment of mental disorders is achieving sub-optimal outcomes; in addition little attention is given to preventative efforts. Due to the immense burden of mental disorders, there is now an urgent need to identify modifiable targets to reduce the incidence of these disorders. Diet and nutrition offer key modifiable targets for the prevention of mental disorders and have a fundamental role in the promotion of mental health.

Epidemiological data, basic science, and clinical evidence suggest that diet influences both the risk for and outcomes of mental disorders. As such, we advocate that evidence-based nutritional change should be regarded as an efficacious and costeffective means to improve mental health.

In addition to dietary modification, we recognize that nutrient-based (nutraceutical) prescription has the potential to assist in the management of mental disorders at the individual and population level. Many of these nutrients have a clear link to brain health, including: omega-3s, B vitamins (particularly folate and B12), choline, iron, zinc, magnesium, S-adenosyl methionine (SAMe), vitamin D, and amino acids. While we advocate for these to be consumed in the diet where possible, additional select prescription of these as nutraceuticals may also be justified.

Ongoing research (including randomized controlled trials) in the area is recognized as critical, using methodologically rigorous designs. Further explication of the biological pathways affected by nutritional modification is also required. Clinical trials of nutraceuticals should include assessment of biomarkers in tandem with clinical outcomes. Global research and health promotion activities focused on improving population health should also include mental health parameters as priority targets and measured outcomes.

Importantly, the activities of the food industry need to be examined at a governmental level and relevant policies designed to reduce the global burden of physical and mental ill-health attributable to poor diet. Such policies are advised to stimulate significant public change in dietary habits back towards a traditional wholefood diet (dependent on the culture). Further, there is now a vital need for better public and clinician education to communicate current research findings from the field.

In summary, nutrition and nutraceuticals should now be considered as mainstream elements of psychiatric practice, with research, education, policy, and health promotion reflecting this new paradigm. As detailed in our consensus statement, we advocate for the pursuit of an integrative psychiatric model, with diet as a key element. Further, the select use of evidence-based nutraceuticals should be a mainstay of treatment as either standalone therapies (mainly in cases of less severe mental disorders, non-tolerance to medication, nutrient deficiencies, or patient choice), or as adjunctive interventions with psychotropic medications to augment treatment efficacy. We recognize the importance of clinician and public education regarding evidence-based nutrition and nutraceuticals to drive mainstream acknowledgement of their impact on mental health.

It is the intention that this position statement and the ongoing work of ISNPR will assist in facilitating a transformation in psychiatry to better address the substantial global burden of mental illness, recognizing and embracing diet and nutrition as central determinants of both physical and mental health.

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DOI 10.1002/wps.20223