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Pilot study suggests synbiotic has "profound effects" on emotional health

New 'striking and enlightening' pilot research indicates a daily synbiotic drink can reduce fatigue and improve focus within six weeks of intervention.

In this study, fourteen charity workers completed a Wellbeing Process Questionnaire before and after a six-week intervention involving the consumption of a kefir and prebiotic mixture (170ml Chuckling Goat kefir, 10g prebiotic powder and a banana).

Conducted by Dr Miguel Toribio-Mateas, Clinical Neuroscientist and Honorary Research Fellow at Cardiff University, and Professor Andrew Smith, Director of the Centre for Occupational and Health Psychology at the Cardiff University's School of Psychology, the results suggest that several aspects of wellbeing significantly improved after intervention.

Dr Mateas asserts: "The outcomes of the study were both striking and enlightening. Participants reported a noticeable decrease in daytime sleepiness and an increased sense of immersion and engagement in their work. More importantly, they experienced an uplift in their overall life satisfaction and a heightened sense of flourishing.

"These findings are remarkable because they are not just abstract concepts. They're real, tangible experiences that significantly impact our daily lives and our ability to function at our best. Life satisfaction, a measure of how content people are with their lives, and thriving, a reflection of personal growth and the ability to overcome challenges, are essential indicators of mental health and wellbeing.

"On that basis, the study suggests that synbiotics may play a role in enhancing these aspects, indicating a connection between gut health and mental wellbeing in the workplace."

He explains the uniqueness of this study: "Crucial to this study was the Wellbeing Process Questionnaire (WPQ), a powerful tool that goes beyond mere biological analyses. The WPQ is a thoughtful instrument designed to capture the nuanced tapestry of our wellbeing.

"It goes beyond traditional measures, offering a unique lens through which individuals can reflect on various dimensions of their mental and emotional health. The WPQ examines how people engage with their environment, process emotions, and experience satisfaction in life, providing rich insights into personal fulfilment and thriving.

"This self-assessment bridges the gap between subjective wellbeing and objective health metrics - such as those from the results of a gut microbiome stool test - offering a comprehensive view of how we function and flourish in our daily lives

Success with synbiotics

Synbiotics were formally defined by the ISAPP in 2020 as "a mixture comprising live microorganisms and substrate(s) selectively utilised by host microorganisms that confer a health benefit on the host", wherein the prebiotic component selectively favours the probiotic organism, thereby enhancing its survival and adherence in the gastrointestinal tract.

The concept is based on the premise that using substances from both categories can have a more beneficial effect on the host's health than either one alone.

Kefir is a fermented milk drink featuring renowned lactic acid bacteria that coexist in synbiotic association with other microorganisms in kefir grains, including other bacteria and yeast

The most predominantly found bacterial species in kefir grains are Lactobacillus kefiranofaciens, *Lacticaseibacillus paracasei (basonym Lactobacillus paracasei), Lactiplantibacillus planatarum (basonym Lactobacillus plantarum), Lactobacillus acidophilus, and Lactobacillus delbrueckii subsp. Bulgaricus*. On the other hand, *Saccharomyces cerevisiae, S. unisporus, Candida kefyr, a*nd *Kluyveromyces marxianus ssp.* are the most commonly found species of yeast in kefir.

The current study used a synbiotic drink that combined goats milk kefir with a wholefood powder containing 18 different types of prebiotics: fructooligosaccharides (FOS) from beetroot, betaglucans, chitin and mannan from maitake mushroom, isomaltooligosaccharide (IMO) from miso, glycyrrhizans and glycyrrhizin from liquorice root, arabinan from quinoa, xylan and galactan from spirulina, arabinoxylan and cellulose/hemicellulose from psyllium husk, resistant starch from arrowroot, inulin from chicory, xyloglucan from tamarind, pectin from orange peel, xylooligosaccharides (XOS) from rice bran, guar bean, and galacto-oligosaccharides (GOS) from chickpeas.

Dr Mateas explains the use of charity workers for this study, saying these workers are often "particularly susceptible to burnout and mental health challenges".

He explains: "Their commitment to social, humanitarian, and environmental causes frequently places them in emotionally demanding situations, which can take a toll on their psychological wellbeing."

The study

Sixteen workers were recruited and provided baseline survey data. Fourteen workers (3 male and 11 female) completed the intervention and the post-intervention survey.

They created a "gut-brain health" corner in the participants' office kitchen, where they had access to two food blenders and all food ingredients required to make a "gut-brain smoothie," namely goat's milk kefir, bananas the multifibre prebiotic, for the six week intervention period.

T-tests were used to compare the scores for the outcome variables at baseline and postintervention. These analyses showed that after the intervention, the participants were significantly more satisfied with life, felt more flourishing, were more immersed in their jobs, and felt less sleepy.

Dr Mateas notes limitations to the study, other than the small sample size, include the lack placebo control group and lack of measurement of the gut microbiome.

He says: "Future research is needed to dissect these mechanisms further and should include a smoothie without fruit to rule out its impact on increased measures of wellbeing."

He concludes: "This study opens up new avenues for understanding how our diet can influence not just our physical health but our mental and emotional wellbeing too. It highlights the significance of holistic approaches in workplace wellbeing initiatives, considering both the physical and psychological aspects of health.

"To think that a simple intervention can have such profound effects on emotional health in a working environment where 9 in 10 people report feeling stressed, overwhelmed or burnt out really enthuses me.

This is just a tiny pilot study, but I am certain that people in other realms of professional life have similar demands on their emotional health and could benefit from a similar type of support to their gut and nervous system."

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"A synbiotic intervention to improve wellbeing at work "

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