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3 **The Dark side of Acetaminophen**

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9 **Madam,**

10 Risk-taking behaviour is defined as health concerning behaviours like unsafe sex,
11 substance abuse and various sexual behaviours that result in increased mortality and
12 morbidity.¹ Risk-taking behaviour is highly prevalent among adolescents, especially
13 males and factors like low socio-economic status, lack of support and insufficient
14 paternal supervision results in high risk-taking behaviour.² Maintaining physical
15 intimacy and generation of a financial income are two main reasons for risky sexual
16 behaviour in young homeless people of Pakistan.³ However, recently in 2020,
17 Keaveney et al. found a strong link between acetaminophen and risk-taking behaviour
18 by conducting a three double-blind placebo-controlled study among healthy young
19 adults. The study revealed that acetaminophen works as an analgesic by inhibiting
20 psychological processes such as affect heuristic, decision-making, and blunting
21 affective reactivity. The first trial showed significant risk-taking behaviour on BART
22 (Balloon Analog Risk Task) with a therapeutic dosage of acetaminophen having t (140)
23 of -2.29 and P-value of 0.023. In contrast, studies 1 and 2 for risk perception showed
24 significant T-test results.⁴ Overall, throughout all studies (n=545) acetaminophen
25 increased risk-taking behaviour.

26 These findings raise quite a concern, especially in Pakistan due to its widespread use.
27 According to a study in 2013, 82% of the population of Islamabad with a headache, self-
28 medicated with acetaminophen.⁵ After carrying out a detailed literature search on

29 PubMed and PakMediNet, very limited studies identified potential causes for risk-
30 taking behaviour in Pakistan. One study conducted in 2016 in Naara Jail Hyderabad
31 found that increased tea consumption with excess sleep had an inverse relationship with
32 criminal behaviour, while high blood pressure and substance abuse had a direct
33 relationship.⁶

34 The high use of acetaminophen in the general population and exponential increase in
35 risk-taking behaviours in Pakistan like smoking, substance abuse, sexual violence and
36 criminal law violation raises many questions on what should be the next big step?

37 This discovery calls for more studies on analysing the connection between
38 acetaminophen and risk-taking. The policy of over the counter availability of
39 acetaminophen in Pakistan should be revised. Patients should be counselled about over-
40 dosing and its effect on the behaviour whenever prescribed. While prescribing it in Jail
41 and psychic wards special caution should be taken to prevent risk-taking. Awareness
42 about acetaminophen's behavioural impact should be propagated through media
43 campaigns in the general public of Pakistan.

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