

some general relationship between the two. The agreement on changes in sexual desire and capacity for orgasm are less well agreed upon by all the investigators. There does seem little doubt that it impairs the desire and capacity for sexual pleasure in 10-15 percent of women who use these medications for any significant period of time. A somewhat smaller percentage seem to have an increase in desire and capacity for pleasure: and this seems especially marked in psychiatric patients, which, I think, underscores the inner relationship between biological and psychological factors in this area. There have been two reported cases of nymphomania, one of whom I saw. From the patient's subjective report and the medication she was using, my guess is that she was responding to this as to a male hormone testosterone, to which the medication she took is related chemically. The clinical picture was very similar to that seen with women who have used male hormones for treatment of other conditions. One problem we became aware of in trying to assess changes in sexual behavior in women taking the pill was that the women often did not notice it themselves, but their husbands commented on it. This phenomena has been noted by other investigators, but has not been fully exploited from a research standpoint.

While the research available in this area with reference to the emotional problems generated by hormone use is not inconsequential, I think all investigators would agree there is much to be done. There are not, as I have told you, any studies of any consequence on sequential hormone users. There has been extremely little in the way of research done on the possible mechanisms underlying these emotional changes in the human. For example, our longest study involves only 1-month use of drug. While we were able to demonstrate change during this period of 1 month, we do not know whether there is a return to normalcy with prolonged use in some women, while others who become depressed may not so change. For example, our longest study involves only 1 month of drug use.

Senator NELSON. You say there have not been any study of any consequence on sequential pills?

Dr. KANE. In reference to behavior.

Senator NELSON. Have you reviewed all the published literature on the psychiatric effects or depression effects of the use of—

Dr. KANE. I think I am pretty current.

Senator NELSON. Do you have a bibliography?

Dr. KANE. I have submitted to you, I think, the salient bibliographic items you would need, which refer to—

Senator NELSON. Referring to the studies that you include in your statement.

Dr. KANE. Right.

Senator NELSON. How many studies have there been, offhand, on this subject? And when did they start?

Dr. KANE. There are actually only four studies that are really at all systematic in their evaluation of behavioral change. The bibliography I presented to you has to do with the—

Senator NELSON. I see the earliest one appears to be Keeler and Daly and Kane, "An Acute Schizophrenic Episode Following Abrupt Withdrawal of Enovid," and so on—1964. Then the next one appears to be 1966, the next one 1967—